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Gypsy Moth Management
in the United States:
a cooperative approach

Final
Environmental Impact Statement
Volume V of V

Appendix H

Comments on the Draft Environmental Impact Statement, and Responses

November 1995



United States
Department
of Agriculture



Forest Service



Animal and Plant
Health Inspection
Service



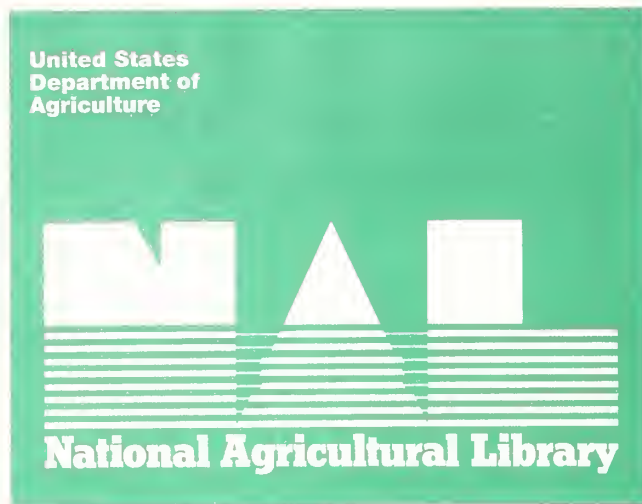
Hand

Strateg

suppression—the insect is already established in the area where it is already established

eradication—eliminating isolated infestations of the gypsy moth, to prevent establishment in new areas

slow the spread—keeping low level populations of the gypsy moth from rapidly increasing, to slow the spread of the insect from areas where it is already established



and

reas where



Alternatives

Alternative 1—No suppression, no eradication, no slow the spread

Alternative 2—Suppression

Alternative 3—Eradication

Alternative 4—Suppression and eradication

Alternative 5—Eradication and slow the spread

Alternative 6—Suppression, eradication, and slow the spread



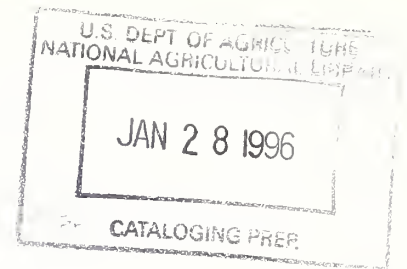
The complete final environmental impact statement, Gypsy Moth Management in the United States: a cooperative approach, consists of five volumes:

- Volume I.** Summary
- Volume II.** Chapters 1-9 and Appendixes A-E
- Volume III.** Appendix F, Human Health Risk Assessment
- Volume IV.** Appendix G, Ecological Risk Assessment
- Volume V.** Appendix H, Comments on the Draft Environmental Impact Statement, and Responses



The record of decision is a separate document published and available 30 days or longer after the notice of availability for the final environmental impact statement is published in the Federal Register (40 CFR Part 1506.10).

Publisher of the environmental impact statement and the record of decision: U.S. Department of Agriculture, Forest Service, Northeastern Area State and Private Forestry, Radnor, PA



Appendix H

Comments on the Draft Environmental Impact Statement, and Responses

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This appendix describes public involvement activities and names the respondents who sent letters on the draft environmental impact statement. It describes the procedure followed in analyzing the letters, summarizes the comments, and gives the Forest Service and Animal and Plant Health Inspection Service (APHIS) responses.

Public Involvement

The Forest Service and APHIS mailed the complete draft environmental impact statement to 2,258 individuals and organizations who requested it and to Federal and State agencies interested in the gypsy moth, public health, or the environment. The complete environmental impact statement was also sent to 407 Federal depository libraries covering all 50 States, the District of Columbia, and Puerto Rico. An additional 10,735 copies of the summary were mailed to other individuals and organizations with the suggestion that they review the complete document if they wished to submit comments.

News stories were submitted to newspapers and placed on the Internet, and a public service announcement was sent to radio stations throughout the United States. Newspaper clippings retrieved show that at least 134 newspapers published information about the draft environmental impact statement reaching between 1.2 million and 4.0 million readers. The public service announcement was aired on at least 313 radio stations reaching an audience of at least 21 million people.

The notice of availability of the draft environmental impact statement was published in the *Federal Register* on May 12, 1995, and the comment period lasted from May 12 to June 26, 1995. Ninety-one comment letters were received by June 26. An additional 55 comment letters arrived after the close of the comment period, for a total of 146. *Appendix*

C (Public Involvement and Issues) provides additional detail on the public involvement process followed in preparing this environmental impact statement.

Letters were received from respondents in 36 States, the District of Columbia, and Canada. This broad geographical distribution of respondents indicates that the environmental impact statement is indeed national in scope, which was the intent of the preparers. Respondents' affiliations also indicate that a broad range of interests was represented:

- Individual (40 letters)
- Congress (1 letter)
- Environmental or conservation organization (17 letters)
- Federal agency (33 letters)
- Industry (10 letters)
- Local government (6 letters)
- Multiple chemical sensitivity (11 letters)
- State agency (26 letters)
- University (2 letters)

Respondents by Number

In this list respondents appear in the order in which their letters were received.

- 1 Robert W. Koenig, Indiana Department of Natural Resources
- 2 Koleka Everett
- 3 Barbara A. Osiolek
- 4 Edwin H. Auerbach, Jr., Auerbach Appraisals, Inc.
- 5 Janus Blue
- 6 Warren T. Doolittle, International Society of Tropical Foresters, Inc.
- 7 Mary F. Olsen
- 8 James R. (Bud) Fahs
- 9 Jerry A. Maracchini, New Mexico Department of Game and Fish

Comments and Responses

- | | | | |
|----|---|----|--|
| 10 | Jim Notestine | 38 | Deborah Ellis |
| 11 | Don H. Robbins, North Carolina Department of Environment, Health, and Natural Resources | 39 | John P. Wolflin, USDI Fish and Wildlife Service |
| 12 | Jack Edmundson, USDA Animal and Plant Health Inspection Service | 40 | Charles Kulp, USDI Fish and Wildlife Service |
| 13 | M.L. Nation | 41 | Clifford G. Day, USDI Fish and Wildlife Service |
| 14 | Samuel V. Mace, Delaware Department of Natural Resources and Environmental Control | 42 | William J. Niedermyer, USDI Fish and Wildlife Service |
| 15 | Marie Davis | 43 | Willie R. Taylor, U.S. Department of the Interior |
| 16 | Sallie Bones | 44 | Ray Vaughan, Stony Kill Environmental Center |
| 17 | William Nagy, Nagy Forestry and Surveying Services | 45 | Len Chidester |
| 18 | Michael Birmingham, New York Department of Environmental Conservation | 46 | Kate Lambdin |
| 19 | James Brown, Oregon Department of Forestry | 47 | Donald A. Eggen, Delaware Department of Agriculture |
| 20 | Mark Northam, Pike Lumber Company | 48 | Al Brooks |
| 21 | Mickey Bryant, Florida Department of Environmental Protection | 49 | Steven A. Katovich, USDA Forest Service |
| 22 | Paul Shogren | 50 | Bruce Kauffman, Tennessee Department of Agriculture |
| 23 | Ray Jyo, U.S. Department of the Army | 51 | Bradley P. Onken, USDA Forest Service |
| 24 | Robert Balaam, New Jersey Department of Agriculture | 52 | Richard J. Swiat, East Coast Helicopter |
| 25 | Carol Motloch, USDA Animal and Plant Health Inspection Service | 53 | Amy H. Onken, USDA Forest Service |
| 26 | Jerry Giardino, Siskiyou County (California) Board of Supervisors | 54 | James P. Linnane, USDA Forest Service |
| 27 | Barry Towers, Pennsylvania Department of Environmental Resources | 55 | Linda Butler, West Virginia University |
| 28 | Lynda Kemp, Northern Virginia Planning District Commission | 56 | Peter A. Rush, USDA Forest Service |
| 29 | Brownie Newman, Southern Appalachian Biodiversity Project | 57 | David B. Dreisbach |
| 30 | Elwood R. Hart, Iowa State University | 58 | Isi A. Siddiqui, California Department of Food and Agriculture |
| 31 | Ronald M. Weseloh, The Connecticut Agricultural Experiment Station | 59 | Jim Kotcon, West Virginia Sierra Club |
| 32 | Michael R. Kozier, Garrett County (Maryland) Consolidated Farm Service Agency Office | 59 | Shalom Tazewell, West Virginia Sierra Club |
| 33 | Edward H. Holsten, USDA Forest Service | 60 | Ruth Blackwell Rogers |
| 34 | Dorman E. Pullin, USDA Animal and Plant Health Inspection Service | 61 | James Caffrey |
| 35 | Andreas Mager, Jr., National Marine Fisheries Service | 62 | Michael D. Connor, USDA Forest Service |
| 36 | R. Gary Bustamante, USDA Forest Service | 62 | James B. Hanson, USDA Forest Service |
| 37 | Wayne Gibson | 62 | Dennis A. Haugen, USDA Forest Service |
| | | 62 | Steven A. Katovich, USDA Forest Service |
| | | 63 | Richard E. Sanderson, U.S. Environmental Protection Agency |
| | | 64 | Anthony F. Maciorowski, U.S. Environmental Protection Agency |
| | | 65 | Marti Olesen |
| | | 66 | Fred and Charlotte Nelson |
| | | 67 | Bernard F. Dowler, West Virginia Department of Natural Resources |
| | | 68 | Agnes F. Janiga |
| | | 69 | Mike Chisdock, Lackawanna County |

Comments and Responses

- | | | | |
|-----|--|-----|--|
| | (Pennsylvania) Parks and Recreation | 104 | Charles O. King |
| 70 | Marilyn G. McVicker | 105 | Philip G. Carew, Pike Lumber Company |
| 70 | Ellen E. Kinnear | 106 | Julie O'Donnell |
| 71 | Marion Harless | 107 | Brad T. Barber, Utah Office of Planning and Budget |
| 72 | Lia H. Spiegel, Wyoming State Forestry Division | 108 | Charles Coffman, West Virginia Department of Agriculture |
| 73 | Kathy Conklin Ames | 109 | Lynn Lawson, Environmental Illness/Multiple Chemical Sensitivities Support Group |
| 74 | Paul Wilson | 110 | Ernie Reed, Virginians for Wilderness |
| 75 | Kenneth W. Holt, U.S. Department of Health and Human Services | 111 | Alfred S. Eldier, USDA Animal and Plant Health Inspection Service |
| 76 | Edward G. Kraynok, Coastal Lumber Company | 112 | Judith E. Hoyer |
| 77 | Robert R. Reid, Jr. | 113 | Eugene H. Bender |
| 78 | Peter Luzenhofer | 114 | Linda Conklin, People for Health Forests |
| 79 | Thomas P. Rooney, Mid-Atlantic Biodiversity Project | 115 | Helen Ferranto |
| 80 | Myra Bonhage-Hale | 116 | Jean W. Graber |
| 81 | Dorothy I. Miller | 117 | Basil M. Kyriakakis, Forest Inholders Guarding Habitat Together |
| 82 | Vickie L. Hughes | 118 | Adam Polinski |
| 83 | Craig Stead | 119 | William A. Carothers, USDA Forest Service |
| 84 | Raymond A. Cardona, Uniroyal Chemical Company, Inc. | 120 | David Blackburn, Arkansas State Plant Board |
| 85 | Jeffrey A. Werner | 121 | Ken Midkiff, Sierra Club-Ozark Chapter |
| 86 | Sandra Lea Snyder, Vermonters for Environmental Health | 122 | Roger E. Burnside, Alaska Department of Natural Resources |
| 87 | Bruce Pauli, Canadian Wildlife Service | 123 | Ernie Reed, Sierra Club-Virginia Chapter |
| 88 | Howard Kuff, Newton County (Arkansas) Wildlife Association | 124 | Z. Andrew Gerry |
| 89 | Daniel J. Hilburn, Oregon Department of Agriculture | 125 | Debra Allen-Reid, USDA Forest Service |
| 90 | Allen Baumgard, Ohio Department of Agriculture | 126 | Honorable Patrick Leahy, United States Senate |
| 91 | Dale Schweitzer, The Nature Conservancy | 127 | Matt Meyers |
| 92 | Reg Rosander, USDA Animal and Plant Health Inspection Service | 128 | Dale V. Wilhelm, Tennessee Valley Authority |
| 93 | Lee Miller | 129 | Robert E. Burks |
| 94 | H. Jay Zwally | 130 | Joe Carbone, USDA Forest Service |
| 95 | Jackie Turner, Audubon Society-Shawnee Chapter | 131 | Lloyd E. Garcia, North Carolina Department of Agriculture |
| 96 | Christopher Lewis | 132 | Thomas G. Eiber, Minnesota Department of Natural Resources |
| 97 | Lloyd Hayner | 133 | Stephanie R. Irene, U.S. Environmental Protection Agency |
| 98 | Ernie Reed, The Living Education Center for Ecology and the Arts | 134 | Chrys Baggett, North Carolina State Clearinghouse |
| 99 | Carol Westinghouse | 135 | Philip R. Brueck, USDI National Park Service |
| 100 | Carol A. Scelza | 136 | Christopher Lewis, Society Targeting Overuse of Pesticides |
| 101 | Faith Spaulding | | |
| 102 | Paul C. Hammond | | |
| 103 | Tod A. Clingman, Metro Tree Service, Inc. | | |

Comments and Responses

137	Jackie Turner
138	Alex Barber, Kentucky Department for Environmental Protection
139	Gary L. McAninch, Virginia Department of Agriculture and Consumer Services
140	Susan Clarke, Environmental Health Advocacy League
141	Grace Ziem, MCS Referral and Resources
142	Edward G. Dauchess
143	Charles E. Higgs, Wisconsin Department of Natural Resources
144	Mark Donham
144	Kristi Hanson
145	Donna Leonard, USDA Forest Service
146	Paul R. Nickerson, USDI Fish and Wildlife Service

Caffrey, James	61
Carbone, Joe	130
Cardona, Raymond A.	84
Carew, Philip G.	105
Carothers, William A.	119
Chidester, Len	45
Chisdock, Mike	69
Clarke, Susan	140
Clingman, Tod A.	103
Coffman, Charles	108
Conklin, Linda	114
Connor, Michael D.	62
Dauchess, Edward G.	142
Davis, Marie	15
Day, Clifford G.	41
Donham, Mark	144
Doolittle, Warren T.	6
Dowler, Bernard F.	67
Dreisbach, David B.	57
Edmundson, Jack	12
Eggen, Donald A.	47
Eiber, Thomas G.	132
Elder, Alfred S.	111
Ellis, Deborah	38
Everett, Koleka	2
Fahs, James R. (Bud)	8
Ferranto, Helen	115
Garcia, Lloyd E.	131
Gerry, Z. Andrew	124
Giardino, Jerry	26
Gibson, Wayne	37
Graber, Jean W.	116
Hammond, Paul C.	102
Hanson, James B.	62
Hanson, Kristi	144
Harless, Marion	71
Hart, Elwood R.	30
Haugen, Dennis A.	62
Hayner, Lloyd	97
Higgs, Charles E.	143
Hilburn, Daniel J.	89
Holsten, Edward H.	33
Holt, Kenneth W.	75
Hoyer, Judith E.	112
Hughes, Vickie L.	82
Irene, Stephanie R.	133
Janiga, Agnes F.	68
Jyo, Ray	23

Respondents in Alphabetical Order

This alphabetical listing of respondents includes the numbers assigned to them in the previous list.

Allen-Reid, Debra	125
Ames, Kathy Conklin	73
Auerbach, Edwin H., Jr.	4
Baggett, Chrys	134
Balaam, Robert	24
Barber, Alex	138
Barber, Brad T.	107
Baumgard, Allen	90
Bender, Eugene H.	113
Birmingham, Michael	18
Blackburn, David	120
Blackwell Rogers, Ruth	60
Blue, Janus	5
Bones, Sallie	16
Bohage-Hale, Myra	80
Brooks, Al	48
Brown, James	19
Brueck, Philip R.	135
Bryant, Mickey	21
Burks, Robert E.	129
Burnside, Roger E.	122
Bustamente, R. Gary	36
Butler, Linda	55

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Katovich, Steven A.	49, 62	O'Donnell, Julie	106
Kauffman, Bruce	50	Olesen, Marti	65
Kemp, Lynda	28	Olsen, Mary F.	7
King, Charles O.	104	Onken, Amy H.	53
Kinnear, Ellen E.	70	Onken, Bradley P.	51
Koenig, Robert W.	1	Osiolek, Barbara A.	3
Kotcon, Jim	59	Pauli, Bruce	87
Kozier, Michael R.	32	Polinski, Adam	118
Kraynok, Edward G.	76	Pullin, Dorman E.	34
Kuff, Howard	88	Reed, Ernie	98, 110, 123
Kulp, Charles	40	Reid, Robert R., Jr.	77
Kyriakakis, Basil M.	117	Robbins, Don H.	11
Lambdin, Kate	46	Rooney, Thomas P.	79
Lawson, Lynn	109	Rosander, Reg	92
Leahy, Honorable Patrick	126	Rush, Peter A.	56
Leonard, Donna	145	Sanderson, Richard E.	63
Lewis, Christopher	96, 136	Scelza, Carol A.	100
Linnane, James P.	54	Schweitzer, Dale	91
Luzenhofer, Peter	78	Shogren, Paul	22
Mace, Samuel V.	14	Siddiqui, Isi A.	58
Maciorowski, Anthony F.	64	Snyder, Sandra Lea	86
Mager, Andreas, Jr.	35	Spaulding, Faith	101
Maracchini, Jerry A.	9	Speigel, Lia H.	72
McAninch, Gary L.	139	Stead, Craig	83
McVicker, Marilyn G.	70	Swiat, Richard J.	52
Meyers, Matt	127	Taylor, Willie R.	43
Midkiff, Ken	121	Tazewell, Shalom	59
Miller, Dorothy I.	81	Towers, Barry	27
Miller, Lee	93	Turner, Jackie	95, 137
Motloch, Carol	25	Vaughan, Ray	44
Nagy, William	17	Werner, Jeffrey A.	85
Nation, M.L.	13	Weseloh, Ronald M.	31
Nelson, Fred and Charlotte	66	Westinghouse, Carol	99
Newman, Brownie	29	Wilhelm, Dale V.	128
Nickerson, Paul R.	146	Wilson, Paul	74
Niedermeyer, William J.	42	Wolflin, John P.	39
Northam, Mark	20	Ziem, Grace	141
Notesine, Jim	10	Zwally, H. Jay	94

Comments and Responses

Procedure Followed in Analyzing Public Comments

In their interest to provide opportunity for public involvement and to consider public input in the decision process, the Forest Service and APHIS considered all comment letters received in preparing the final environmental impact statement. An environmental documentation consultant, Environmental Innovations of Denver, Colorado, was contracted to analyze the public response to the draft environmental impact statement. Conducting the analysis through a consultant resulted in time and cost efficiencies, as well as helped to ensure impartial analysis of public response.

The contractor read all letters and identified substantive comments. The contractor and the preparers then grouped the comments into categories. Because of the number of letters received (146) and the lengths of many of them, comments were summarized as provided by 40 CFR 1503.4. Because comments were summarized, not all suggestions are reflected in this appendix. Nevertheless, suggestions for minor additions, and changes in wording, consistency, and format were incorporated to the extent possible in the time available to prepare the final environmental impact statement.

The Forest Service and APHIS thank those who reviewed the draft environmental impact statement and provided comments. The changes made in response to the comments have resulted in a better document.

Above and beyond the changes suggested by the public, the preparers have refined the document in a number of ways. Most notable is the use of improved data to estimate conditions in the year 2010 under all of the alternatives. In most cases, however, data were not updated to 1995 because it would not have changed the results of the analysis and because the time available for preparing the final document was limited.

Chapters 5 and 6 were updated to include individuals who helped prepare the final environmental impact statement. Chapter 7 was

updated to reflect changes to the mailing list since the draft environmental impact statement was published.

Comments are divided into three sections: general comments, topical comments, and comments on parts of the document. The numbers in parentheses after the comments are those assigned to the respondents. Using the listing of respondents by number, the reader can identify who gave the comments. Page numbers in the comments refer to pages in the draft document. Some comments were answered under more than one category, for the convenience of the reader.

General Comments

Letters 2, 3, 5, 8, 13, 17, 18, 23, 28, 30, 32, 37, 43, 44, 47, 48, 50-52, 54, 56, 58, 59, 61-63, 65, 67, 78, 79, 83, 85, 88, 89, 91, 96, 98, 107, 109, 110, 113-117, 120, 122, 123, 125, 127, 128, 131, 132, 134, 135, 137, 140, 141, 143, 144

This section contains general comments on the environmental impact statement that did not address a subject category or specific part in the document.

Comment

Respondents requested additional information or generated a need for individual contact. (3, 37, 50, 65, 78, 83, 96, 114, 115, 122, 140, 141, 144)

Response

Information is being provided or contact is being made.

Comment

The analysis is based on the assumption that there is a need for management. Nowhere is there an analysis concerning benefits due to the gypsy moth. Gypsy moth defoliation and related mortality can provide benefits to wildlife habitat. A balanced analysis should assess benefits due to the gypsy moth in the no-action alternative. (98, 110, 123)

Comments and Responses

Response

Chapter 4 part B, under Effects Due to the Gypsy Moth, describes both adverse and beneficial effects due to the gypsy moth, including benefits to wildlife. All of these effects were considered in the analysis of the alternatives and are reflected throughout the document, for example, in chapter 2 under Response to Issues, Nontarget Organisms; and in chapter 4 under Consequences of Alternative 1.

Comment

Gypsy moth effects on forest condition and water quality are the same as those that result from management activities conducted by the Ouachita National Forest such as logging, timber stand improvement, wildlife stand improvement, prescribed burning, and roadbuilding. (48)

Response

Gypsy moth effects on forest condition and water quality could be similar to effects due to planned and controlled management for some stands; however, the difference is that gypsy moth effects are unplanned and uncontrolled. It is possible that gypsy moth defoliation could result in changes to forest condition and water quality that are compatible with the land management plan for the area. It is more likely, however, that unpredictable gypsy moth defoliation disrupts management plans and results in loss of resources.

Comment

The respondent is opposed to any means hazardous to human health to stop effects due to the gypsy moth or resources management. The preferred alternative is valid only if treatments are less risky to human health and the environment than is continued spread of the gypsy moth. The environmental impact statement fails in that judgments are avoided and no recommendations are made among the treatments. (48)

Response

Appendix F discloses in depth the human health effects of the treatments. All of the treatments analyzed in the environmental impact statement are approved and used regularly in cooperative gypsy moth management projects based on their safety and efficacy. It is not the function of the environmental impact statement to recommend specific treatments for specific areas, but to present and analyze information about the treatments. After agency decisionmakers select an alternative, officials at the site-specific level will use the information in the environmental impact statement to help them make informed choices about what if any treatments are appropriate to use. They will also solicit public input before conducting treatments, and will respond to human health or any other concerns expressed by local citizens.

Comment

Respondents suggest a Nichiren Shoshu world peace chant (5) or praying in tongues (2).

Response

These techniques were not analyzed in the environmental impact statement.

Comment

One respondent experienced allergic reactions, and had property damage and reductions in squirrel populations due to the gypsy moth, and questioned the effectiveness of a State program. (37)

Response

Comment noted. The letter was forwarded to the State agency in charge of gypsy moth suppression.

Comment

The environmental impact statement should address how gypsy moth management conforms to city, State, and Federal regulations. (8)

Comments and Responses

Response

The environmental impact statement states that Federal agencies are directed to cooperate to the extent possible to reduce duplication and avoid conflict with State law, plans of other Federal agencies, and State and local plans.

Comment

Although most public acreage is sprayed during outbreaks, private lands generally are not sprayed unless they are highly sensitive areas. The most effective approach would be for the Federal government to spray all land ownership in an infested area. (17)

Response

The Forest Service conducts suppression on National Forest System lands. Acres of suppression conducted on private land generally exceed acres of public lands annually. Suppression on other Federal and non-Federal lands is conducted by Federal or State agencies that identify a need for gypsy moth treatment. These agencies prepare proposals for treatment projects that may include requests for U.S. Department of Agriculture (USDA) assistance. Proposals by State agencies usually include private acreage to be treated on a voluntary basis.

Comment

Three respondents commented on the requirement for private landowners to participate or not participate in management projects. (51, 116, 144)

Response

Participation by private landowners in Federal cooperative gypsy moth management projects is voluntary. The USDA cannot require individual landowners to participate in gypsy moth management projects. Any requirement that individuals participate would be found in State law, or county or municipal code.

Comment

No one suppression method should be used; use an integrated pest management approach. (32)

Response

All of the strategies in the environmental impact statement, including suppression, follow an integrated pest management approach. One of the considerations in taking an integrated pest management approach is to choose an appropriate treatment from the range of treatment options provided in the environmental impact statement.

Comment

One respondent stresses the importance of tracking gypsy moth populations through a survey program. Especially important is an organization under which gypsy moth information from the field can be passed along to those planning gypsy moth projects (44). Another respondent commented on the need to monitor populations, suggesting that overtreating areas for problem insects has resulted in the insects developing resistance to pesticides, eliminating their parasites and predators, and polluting the environment (116).

Response

Surveys are conducted to monitor gypsy moth populations, to determine the extent of infestations, and to detect and delimit isolated infestations of the gypsy moth in the gypsy moth management program. Federal and State agencies responsible for gypsy moth management are organized to receive information from field workers that is used in planning projects. Information from gypsy moth population surveys is considered with detailed information about specific sites to determine whether treatment should be considered. If the need for treatment is identified, a site-specific analysis is conducted before any treatment is applied. The analysis considers potential effects of treatments on the gypsy moth, nontarget organisms, and other environmental and human factors. See *appendix B* for information on surveys.

Comment

There is bias towards aggressive gypsy moth control, as illustrated by exaggeration of dangers of gypsy moth infestation and understatement of hazards of some of the control measures. (48)

Response

The respondent did not provide specific examples in the text that demonstrate bias. The preparers made every attempt to convey the information accurately and with no exaggeration.

Comment

The draft environmental impact statement was released at the peak of the suppression season. A contractor was too busy spraying for forest pests to review it completely. Release the final environmental impact statement in November when the industry will be in a slow period so that there will be time to respond. (52)

Response

Release of the final environmental impact statement is not followed by a formal public review and comment period. The Forest Service and APHIS encourage public input on their programs at any time.

Comment

Timing of the draft environmental impact statement release coupled with the lack of innovation in the management approaches explored most likely contributed to fewer public comments than anticipated. (125)

Response

It is equally likely that the timing of the release of the draft environmental impact statement when gypsy moth management projects were being conducted increased interest, aided by media coverage of suppression programs.

Comment

The statement about the USDA conducting eradication under a declaration of emergency on page 5 of the Summary was not included in the

complete draft environmental impact statement. Chapter 1, Proposed Action, should contain more information on the procedure(s) for determining a “viable” introduction of the gypsy moth, preparation of project assistance grants, and the National Environmental Policy Act documentation process, including timelines and formats for development of the analyses supporting a request for USDA assistance from a State agency or other non-Federal landowner. (122)

Response

More detail on implementation of the eradication strategy is provided in *chapter 2*, including a statement about treatment under emergency declaration. Procedural detail such as timelines, formats, and the site-specific analysis is coordinated between the Forest Service or APHIS and individual State agencies responsible for gypsy moth management and, therefore, is not included in this programmatic document.

Comment

People who have experienced several outbreaks and become accustomed to the events may be less demanding of the government to do something. (54)

Response

Agree. Perceptions and Behaviors in *chapter 2* discusses people’s attitudes towards the gypsy moth and gypsy moth treatments being affected by their familiarity with the insect and with insecticides.

Comment

Define who does what and when in the site-specific analysis, stating that rapid action requiring advance planning is often necessary. (58)

Response

Chapter 1 under Proposed Action includes a discussion of the process and roles of agencies in detection, preparation of project proposals, requests for assistance, and preparation of site-specific environmental analyses. Greater detail on these and other related activities is provided in *appendix B* (Gypsy Moth Program).

Comments and Responses

Comment

Respondents disagree with the title of the environmental impact statement because it addresses only suppression, eradication, and slow the spread. Other aspects of gypsy moth integrated pest management such as silvicultural interventions are not addressed. (56, 62)

Response

Chapter 1 (Purpose of and Need for Action) explains that the scope of the analysis and the decision to be made involve broad programmatic alternatives based on strategies. Other activities that are part of USDA's gypsy moth program and how they are related to the strategies are discussed throughout the environmental impact statement, and are detailed in *appendix B* (Gypsy Moth Program). Silviculture is specifically discussed in *appendix A* (Gypsy Moth Treatments). The title, Gypsy Moth Management in the United States: a cooperative approach, is appropriate.

Comment

Clarify the legal liability of pesticide applicators who treat organic farming operations. Economic impacts to organic farmers who lose certification due to treatments need to be documented and mitigated more completely. (59)

Response

Impacts on organic farmers are discussed under Consequences of Alternatives in *chapter 4 part C*, and Mitigating Measures are discussed in *chapter 2*. Legal liability of pesticide applicators is outside the scope of this environmental impact statement. Questions concerning liability or other aspects of organic farming and certification may be directed to USDA National Organic Programs, P.O. Box 96456, Room 2510 South Building, Washington DC 20090, Attention: Hal Ricker, program leader.

Comment

Gypsy moth control practices could be better incorporated into the Stewardship Program and the Stewardship Incentives Program. (61)

Response

The opportunity for the Stewardship Program and the Stewardship Incentives Program to assess potential damage from the gypsy moth and to develop contingency management plans is discussed under Assistance in Planning for Forests and Trees in *appendix B*. The suggestion has been forwarded to Forest Service Stewardship and Stewardship Incentives program managers for consideration.

Comment

Environmental justice issues need to be addressed through a discussion of effects on minorities or low-income groups located in or adjacent to areas where the proposed action will occur. (63)

Response

Agree. A discussion of environmental justice issues has been added to *chapter 4 part C* under Conditions Common to All Alternatives, to *chapter 2* under Mitigating Measures, and to *appendix B* under Public Involvement and Notification.

Comment

Site-specific environmental assessments are extremely important to the success of individual projects. (67)

Response

Agree. The site-specific analyses conducted before action can be taken are a critical step in administering the national gypsy moth program.

Comment

There should be stipulations in the environmental impact statement that make individual spray projects subject to appeal pursuant to 36 CFR 215. (79)

Response

Appeal regulations vary by agency through implementing National Environmental Policy Act policies and procedures described in the Council of

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Environmental Quality Regulations (40 CFR 1507.3). Title 36 of the Code of Federal Regulations (Part 215) direction on appeals applies only to National Forest System lands. Site-specific decisions made for actions on National Forest System lands would fall under those appeal regulations.

Comment

A history of eradication and control methods used in Europe is lacking. Since Europeans have been dealing with this problem far longer than we have, they may have developed novel, less environmentally hazardous methods of control. (85)

Response

Gypsy moth populations in Europe may consist of European, Asian, and hybrid gypsy moths. Gypsy moth populations in the generally infested area of the United States originate from the European strain. Unlike in the United States, in Europe the gypsy moth is a native defoliator and is a natural component of the environment. Dealing with the gypsy moth as an introduced pest, an expanding generally infested area, and established populations that do not include Asian or hybrid gypsy moths presents different management challenges for the United States. In Europe recent outbreaks have been reported in Germany, France, Switzerland, and the Slovak Republic in Russia. Researchers are collaborating with scientists in Germany and Russia to determine what can be done to reduce further introductions into the United States.

Comment

The environmental impact statement is flawed since it analyzes the effects of the various treatments in a generic sense without examining the impacts on a specific ecosystem. (88)

Response

The level of analysis is appropriate for a national programmatic environmental impact statement. Although the focus of the analysis was at the national strategic level, specific treatments were evaluated in appendix F (Human Health Risk Assessment) and appendix G (Ecological Risk Assessment) to address effects of implementing the suppression, eradication,

and slow-the-spread strategies. The environmental impact statement points out that before treatment projects can be conducted in cooperation with the Forest Service and APHIS, further analysis of the site-specific effects must be carried out at the local level.

Comment

A Consistency Determination is required with the North Carolina Coastal Management Program. (134)

Response

A telephone call to the State of North Carolina Department of Environment, Health and Natural Resources, Division of Coastal Management affirmed that the programmatic final environmental impact statement is consistent with the North Carolina Coastal Management Program. Consistency Determinations may be required for site-specific analyses for proposed projects.

Comment

A more explicit discussion of approaches on lands such as wilderness, research natural areas, National Park Service lands, and State parks where biodiversity is a high priority would be more useful to a variety of land managers (91). An explicit statement is needed to remind wilderness managers that treatment in wilderness should occur only on an extremely restricted basis, such as in a situation threatening endangered species (59).

Response

Chapter 3, under Recreation, explains that management objectives and administrative regulations and guidelines for special areas such as wilderness within the National Wilderness Preservation System are too diverse to be examined in this document. The National Park Service, in commenting on the draft environmental impact statement, stated the situation well: "National Park Service Integrated Pest Management activities are guided by individual park mandates and management needs. With no defined National policy for the management of gypsy moth, each individual National Park Service park unit

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manager has the primary responsibility for defining the gypsy moth management strategy in their park.” Establishing specific guidelines in the programmatic environmental impact statement for special areas is not practical, and could be more inhibiting than useful to managers.

Comment

One respondent questioned whether public input was required or sought during development of a departmental regulation assigning gypsy moth responsibilities to USDA agencies and establishing gypsy moth policy. (137)

Response

Public input is not required when developing departmental regulations and was not sought.

Comment

The analysis does not include ignorance as a factor. Since the gypsy moth is now a part of the family we should treat it as such and let it diffuse naturally. This should be included in the analysis of no-action. (98, 110, 123)

Response

Under alternative 1, the Forest Service and APHIS would not suppress, eradicate, or slow the spread. Under other alternatives, no treatment is an option.

Comment

The affected environment section failed to include mention of significant acreage in Alaska that is susceptible to the gypsy moth. (122)

Response

Agree. Information on the susceptibility of forests in Alaska has been added to *chapter 3* under Forests.

Comment

The lack of discussion about traditional biological control efforts and chemical insecticides is somewhat disconcerting. (132)

Response

Biological and chemical treatments are discussed in *appendix A* (Gypsy Moth Treatments). Introduced and native parasitoids and predators are not used as treatments in management projects.

Comment

The environmental impact statement does not present a new comprehensive long-term program. It is business as usual, a long-term spray program. The bulk of funds would go to spraying residential areas. Slow the spread is merely eradication carried on long after there is no hope of eradication. There is no preventive medicine. The goal “to protect the forest and trees of the United States” is hardly served by this new program. (143)

Response

Decisions on which forests and trees to protect and how to protect them are made at the site-specific level. The national gypsy moth management program allows for Federal participation to assist people in making those choices.

Comment

Add to the environmental impact statement a commitment of support for inventory efforts, which are particularly needed to document native insects. (134)

Response

Inventory efforts to document native insects are not within the scope of the environmental impact statement; however, this activity could be of great benefit to agencies planning and preparing site-specific analyses for proposed gypsy moth projects.

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Comment

One letter questioned whether the public notice and comment period and analysis was skewed, and may have been a deliberate and calculated attempt by the Forest Service to cut respondents out of the process. The two respondents' names on this letter were deleted from the mailing list. (144)

Response

Omitting these respondents from the mailing list was not intentional. The environmental impact statement team leader apologizes for this error in the mailing list. The two respondents were provided additional time in which to prepare and submit comments. The preparers encouraged comments from the public. The complete draft environmental impact statement was mailed to 2,258 people and to 407 depository libraries. In addition, the summary was mailed to 10,735 people. Public outreach through mass media to encourage public review and response included articles in at least 134 newspapers in 37 States and airing of a public service announcement on 313 radio stations in 38 States. All responses to the draft environmental impact statement have been considered in preparing the final document, including those received after the closing of the formal public comment period. A complete description of efforts to obtain public comments on the draft environmental impact statement is in *appendix C* under Continued Public Involvement Activities.

Comment

A map could show where the uninfested, transition, and generally infested areas are currently, where these areas will probably occur in the year 2010 for the preferred alternative, and where the ecological boundary for the gypsy moth is projected. These areas were used in tables 2-3 through 2-8 (which should be moved to chapter 4), and should be carried throughout the document. The percentage of the total suppression acres should be given for each category of treatment area (residential, recreation, forests, special use). (62)

Response

A map showing the current status of the uninfested, transition, and generally infested areas is shown in *figure 1-2*. Maps showing the status of these areas in the year 2010 for each alternative were added as *figure 2-12*. Projecting the status of these areas beyond the 15-year period could result in misleading and questionable information. There is no ecological boundary for the gypsy moth. *Chapter 3*, under Location, describes the potentially affected environment in the United States as anywhere vegetation is susceptible to gypsy moth feeding. This includes areas with recognized forest type groups as well as “unforested” areas where trees grow in residential areas, urban forests, community parks, riparian areas, small wood lots, and other areas.

Tables 2-3 through 2-8 display the comparison of alternatives required by 40 CFR 1502.14 and are correctly located in *chapter 2*. The uninfested, transition, and generally infested areas have been carried throughout the document. *Chapter 2* includes a section on Where Suppression Would Be Conducted that provides general information on the types of areas treated, and treatment by category in 1993 as an example. Treatment within each category will change annually, so providing percentages for each treatment category would not provide meaningful information and could be misleading.

Comment

Appendixes F and G are less pleasing in appearance than the main part of the draft environmental impact statement; headings are small (89). Appendixes F and G should follow the same two-column format and the unnumbered section format used in the main document (58). Tables and figures in appendixes F and G should be moved from the back of each chapter into the text close to the citations (56).

Response

Appendix F (Human Health Risk Assessment) and *appendix G* (Ecological Risk Assessment) were prepared to provide technical details of the analysis. Corrections were made in these appendixes for the

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final environmental impact statement. In the interest of production time and cost savings, however, the format of these appendixes has remained the same.

Comment

A respondent expressed disappointment in the continued use of and failure to acknowledge that the term “gypsy moth” has racist overtones that continue to malign a group of people that are persecuted. The respondent suggested “Anglo Moth” as a more appropriate name. (117)

Response

We recognize and respect the concern expressed by the respondent. The term “gypsy moth” is used internationally as the common name for the insect species *Lymantria dispar* [L.], a moth. This environmental impact statement does not provide the forum to change the common name of this species. The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington DC 20250 or call 202-720-7327 (voice), or 202-720-1127 (TDD).

Comment

Mention the trade names for common B.t. and diflubenzuron products. The trade name Dimilin has much wider recognition than the chemical name diflubenzuron. (89)

Response

The trade names are given in the Glossary.

Comment

The document was not easily read in many areas. (56)

Response

Other respondents complimented the document on its content, presentation and readability.

The following comments were noted. They required no change to the environmental impact statement:

Comment

Letters provided statements of “no comment,” or provided general comments of support for the preferred alternative. (13, 18, 23, 28, 43, 107, 113, 120, 128, 135)

Comment

The environmental impact statement would serve as a good reference for those who deal with administrative units, the public, and those preparing site-specific environmental analyses. (30, 47, 131)

Comment

A respondent complimented the appearance, format, and use of graphics and pictures in the document. (56)

Comment

Current National Park Service Integrated Pest Management (IPM) activities are guided by individual park mandates and management needs. (135)

Comment

One respondent representing the multiple chemical sensitivity issue expressed thanks for telling her that the draft environmental impact statement was printed on recycled paper with soy ink. (109)

Comment

One respondent endorsed the flexibility of the preferred alternative, but stated that they wanted to see more commitment made to the use of IPM as the

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preferred, though not necessarily the exclusive, treatment method. The document provides clear support for the IPM approach, particularly the use of a variety of highly specific control measures. (134)

Topical Comments

This section includes comments and responses on these topics: the scope of the environmental impact statement, the alternatives, the slow-the-spread strategy, integrated pest management, and treatments.

Scope

Letters 15, 49, 56, 58, 71, 77, 116, 143, 144

Comment

Respondents provided comments on subjects unrelated to the gypsy moth environmental impact statement, such as clearcutting and pre-infestation salvage. (15, 116, 144)

Response

Subjects that do not pertain to gypsy moth management in the United States are outside the scope of this environmental impact statement and were not considered in preparing the document.

Comment

There is no discussion of the current U.S. quarantine program. (49, 58)

Response

Quarantine is described in *appendix B* under Regulatory Activities. It is administered by APHIS, and is designed to prevent spread of the gypsy moth by other than natural means within the United States. Quarantine actions are separate from the decision resulting from this environmental impact statement; however, they make up an important component of the comprehensive gypsy moth management program.

Comment

Since funding for gypsy moth management after fiscal year 1996 is not assured, the Forest Service should examine ways to “redeem” gypsy moth responsibilities. (56)

Response

Funding for gypsy moth management projects varies from year to year and will probably continue to fluctuate. Investigating ways to redistribute responsibilities for gypsy moth management in the absence of funding is logical, and is an administrative duty beyond the scope of this environmental impact statement.

Comment

One respondent suggests that a description of the gypsy moth situation in Canada, Europe, and Asia would be useful. (58)

Response

A description of the gypsy moth situation in Canada and other countries was not needed for the analysis contained in this environmental impact statement, which focuses on the United States. The gypsy moth is native to Europe and Asia and is an introduced forest pest in Canada. The gypsy moth is spreading throughout susceptible forests and urban areas in Canada similar to its behavior in the United States.

Comment

The scope of the final environmental impact statement should include public involvement, public education, research, and methods development. (59)

Response

The Forest Service and APHIS chose to confine the scope of the environmental impact statement to an examination of strategic approaches to gypsy moth management. The agencies fully acknowledge the importance of public involvement and education, research, and methods development and know that without these activities, gypsy moth management would be compromised greatly, if it would not be impossible.

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Appendix B (Gypsy Moth Program) has been developed largely in response to public comments received during scoping that stressed the importance of these activities. The appendix explains that these elements of a comprehensive gypsy moth management program are critical and ongoing. Public involvement and education, research, and methods development activities do not require analysis under the National Environmental Policy Act, which guided this document, because they do not have environmental consequences and are not controversial, as is the use of insecticides.

The Forest Service and APHIS believe that the scope of this environmental impact statement is appropriate for the decision to be made, and that implementation of a selected alternative will not shortchange other critical gypsy moth activities. The attention generated by this environmental impact statement should benefit all aspects of program implementation.

Comment

Several respondents suggest greater emphasis and more funding for port-of-entry inspections and inspections of mobile homes and trailers (quarantine). (71, 77, 143)

Response

Preventive measures such as port-of-entry inspections and quarantine inspection certification requirements are important components of a comprehensive gypsy moth management program. They are, however, separate from treatment strategies and projects in both function and funding. They are related in that the more effective port-of-entry inspections and quarantine inspections are, the less need there is for eradication. This environmental impact statement focuses solely on strategic approaches to gypsy moth treatments in the United States.

Alternatives

Letters 1, 3, 4, 6, 7, 9, 11, 14, 15, 19, 20-22, 24-26, 29-32, 34, 37, 38, 45, 47, 49, 52, 54, 56-59, 62, 67, 69, 74, 76-78, 80, 87, 89-91, 93, 103-106, 108,

111, 113, 114, 118, 121, 122, 124, 125, 128, 134, 135, 137, 139, 142-144

Many of the comments related to alternatives state a preference for an alternative. Similar comments were grouped for response.

Alternative 1

Comment

The no-treatment alternative was not seriously considered; effects were not presented. (15, 137, 144)

Response

Alternative 1, presented in the draft environmental impact statement as no suppression, no eradication, no slow the spread, is the equivalent of a no-treatment alternative. It underwent the same analysis process as did the other alternatives. The effects of alternative 1 described in *chapter 4 part C* under Consequences of Alternatives are the effects of the gypsy moth on the same environmental and social factors considered in analysis of the other alternatives.

The following comment on alternative 1 was noted. No response was required.

Comment

Respondents stated a preference for alternative 1, indicating that less treatment is preferable, the government has made mistakes in spraying in the past, or the effects of treatment alternatives are questionable. (7, 80)

Alternative 2

The following comments on alternative 2 were noted. No response was required.

Comment

Alternative 6 is preferred, although alternative 2 may provide moderation between the other alternatives. (14)

Comments and Responses

Comment

Suppression should continue. (69)

Alternative 3

The following comment on alternative 3 was noted. No response was required.

Comment

Alternatives that control the spread and prevent introduction into uninfested areas would seem to be more useful than those that attack chronic and stable infestations. (128)

Alternative 4

Comment

The labeling or characterization of alternative 4 as no action is questioned (58, 144). Calling it “no program change” is preferable (58).

Response

Alternative 4 represents the “no action” alternative in that it would be no change from the current program. This interpretation complies with the Council on Environmental Quality’s guidance on implementing the National Environmental Policy Act (Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 40 CFR 1500-1508).

The following comments on alternative 4 were noted. No response was required.

Comment

The present approach should continue (34).

Comment

Suppression should continue (69).

Alternative 5

The following comments on alternative 5 were noted. No response was required.

Comment

Alternative 5 is favored. Reasons stated include concern for expanding suppression costs or that suppression responsibility should shift to State, county, or local government. (49, 125)

Comment

Alternatives that control the spread and prevent introduction into uninfested areas would seem to be more useful than those that attack chronic and stable infestations. (128)

Alternative 6

Comment

Respondents state support for alternative 6, with certain conditions, limitations, or additions. Most often mentioned is not using diflubenzuron because it affects a greater number of nontarget species. Also mentioned is limiting use of treatments in areas such as State parks and using the least harmful treatment. Measures mentioned for addition to alternative 6 include fungal, natural, or mechanical controls. (21, 69, 78, 87, 91, 106, 114, 121, 124, 135, 139)

Response

Treatments available for the suppression, eradication, and slow-the-spread strategies, as well as no treatment, are all options under alternative 6. Before treatment projects could be conducted, further environmental analysis will be conducted at the local level. The appropriateness of specific treatments and where they will be applied are determined at that time. The use of fungal pathogens, parasitoids, predators, mechanical treatments, and other treatments are discussed under Treatments Not Used in Management Projects in appendix A.

Comments and Responses

The following comments on alternative 6 were noted. No response was required.

Comment

Respondent is opposed to alternative 6. (59)

Comment

Respondents state support for alternative 6, although total eradication would be preferable. (4, 58, 113)

Comment

Respondents stated a preference for alternative 6. Reasons given include that alternative 6 is the most ecologically appropriate, the most flexible, consistent with integrated pest management, and provides a program that deals with a pest that the public is often unable to manage on their own. (1, 3, 4, 6, 9, 11, 14, 19, 20, 22, 24-26, 30, 32, 37, 38, 47, 52, 57, 67, 69, 76, 90, 103-105, 108, 111, 122, 128, 134, 142)

Comment

Suppression should continue. (69)

Comment

Alternatives that control the spread and prevent introduction into uninfested areas would seem to be more useful than those that attack chronic and stable infestations. (128)

New Alternatives

Some respondents state that there was an inadequate range of alternatives, that the alternatives were too narrow in scope, or that a new alternative should be presented.

Comment

Respondents suggest that a new alternative should limit spraying of insecticides, include monitoring, minimize impacts on nontarget organisms, consider cumulative and long-term effects, and include more research. (29, 45, 59, 74, 118, 121)

Response

All of the activities suggested are within the capabilities of the alternatives proposed. The alternatives are presented at a broad programmatic level. Each of them can be implemented through projects for which site-specific analyses must be conducted before implementation. The types of treatments, amounts, impacts on nontarget organisms, and cumulative and long-term effects are only a few of many considerations at the project level. Research is an ongoing activity of the national gypsy moth management program.

Comment

The concept of eradication as a strategy is questioned. The term should be dropped. There should be only two strategies, suppression and spread prevention. The number of alternatives could be reduced. (49, 62)

Response

Suppression, eradication, and slow the spread each have a different objective. All three strategies are included in the alternatives so that all gypsy moth infestation conditions can be addressed.

Comment

Alternatives should reduce the cost of gypsy moth management to the Federal taxpayer, transfer cost to private landowners, reduce cost sharing for suppression over a period of time, prioritize funding for treatment strategies, or fund projects for public lands only. (54, 56)

Response

The environmental impact statement is not a funding decision document. Funding for gypsy moth management is determined annually through the Congressional appropriations process.

Comments and Responses

Comment

A few respondents request a new alternative that includes mechanical treatments, silvicultural treatments, natural control agents, and increased prevention, regulatory activities, research, and education. (62, 93, 143, 144)

Response

Presented at the programmatic level, alternatives are structured on and focus on strategies rather than treatments. Treatments most appropriate and most effective in meeting the objectives of suppression, eradication, and slow the spread are analyzed. Treatments Not Used in Management Projects are discussed in *appendix A*, which had been prepared in response to public comments that urged an examination of all options for managing the gypsy moth. Prevention, regulatory activities, research, and education are conducted by USDA agencies as part of a comprehensive gypsy moth management program. These and other activities are described in *appendix B* (Gypsy Moth Program).

Comment

Explain why the preferred alternative from the 1985 gypsy moth environmental impact statement was not listed for consideration. (62)

Response

Alternatives in the 1985 environmental impact statement, Gypsy Moth Suppression and Eradication Projects, were based on treatments: (1) no action, (2) chemical insecticide treatments, (3) biological treatments, and (4) integrated pest management (IPM). The IPM alternative was preferred and chosen. All alternatives in this current environmental impact statement incorporate an integrated pest management approach to managing the gypsy moth.

Comment

Respondents suggest an alternative allowing some gypsy moth populations to reach high enough levels to promote buildup of the nucleopolyhedrosis virus and fungal pathogens so that gypsy moth populations collapse naturally, to allow control by

natural causes in some areas (59, 77). Some gypsy moth populations would exceed damaging levels. Widespread suppression could slow the buildup of natural biological controls. Aerial application of B.t.k., Gypchek, or other biological controls would be a second line of defense. The existing action alternatives are all based on the false assumption that it is possible to maintain all gypsy moth populations below outbreak levels indefinitely (59).

Response

Gypsy moth populations currently reach outbreak conditions followed by naturally occurring population collapse and would continue to do so under the no-treatment alternative as well as under all the other alternatives. Only a fraction of the generally infested area that has outbreaks is treated. Increases in the nucleopolyhedrosis virus and fungal pathogens are believed to reduce populations and would continue to do so under all the alternatives. Rather than provide a second line of defense, treatments are conducted where it is necessary or desirable to prevent or minimize damage to resources.

Comment

One respondent indicates the need for alternatives that propose increased regulatory activities to stop or slow the gypsy moth, to stop the spread at geographical and environmental barriers, and complete eradication from the United States. New methods, materials, and program capabilities are available now that may make this possible. (58)

Response

Regulatory activities are part of a comprehensive national effort. Within the 15-year time frame covered by this environmental impact statement the gypsy moth will not have progressed geographically to where environmental barriers (reduced host vegetation) becomes a factor. An alternative that describes a national effort to eradicate the gypsy moth from anywhere in the United States was considered but not carried forward as a viable alternative. The high level of activity required to implement such a program would be financially and environmentally costly, and probably would not be acceptable to the public.

Comments and Responses

Slow the Spread

Comment

A few respondents question why slow the spread was included in the analysis since the strategy is being evaluated under the Slow-the-Spread Pilot Project. The area where the slow-the-spread strategy will be applied and criteria for treatment need to be defined. The appropriateness of slow the spread in the transition area of the Upper Peninsula of Michigan and in Maine was questioned since it is too cold for the gypsy moth. (31, 59, 139)

Response

Although the effectiveness of slow the spread is being evaluated in the pilot project, the strategy was analyzed in the environmental impact statement in the event that it is determined to be feasible. The strategy addresses the gypsy moth situation in an area that traditionally has been ignored. The transition area will vary annually depending on the geographic and climatic conditions, and whether outbreaks occur. The criteria for treatment cannot be defined in this environmental impact statement. Specific treatments are determined through site-specific environmental analyses. Gypsy moth infestations in Canada indicate that the transition area in Michigan, and Maine, are not too cold for the gypsy moth.

Integrated Pest Management (IPM)

Comment

Alternatives do not incorporate IPM principles, or there is more emphasis needed on activities such as action thresholds and monitoring, mechanical treatments and trapping that support IPM, or that the USDA is willing to step away from IPM and provide financial support to spray everything. (59, 89, 93)

Response

All of the broad programmatic alternatives examined in this environmental impact statement are based on strategies that the Forest Service and APHIS could adopt to manage the gypsy moth using an integrated pest management approach. Other gypsy-moth-related activities that comprise the national

gypsy moth management program are described in appendix B.

Preferred Alternative

Comment

One respondent questions why alternative 5 was not preferred since estimated future conditions in table 2-2 did not show significant difference in outbreaks and defoliation acreage between alternatives 5 and 6, and alternative 5 would save suppression costs. The analysis used to recommend the preferred alternative is not evident. (62)

Response

The analysis estimated that 1 to 2 million fewer acres of outbreaks and defoliation would occur under alternative 6 than under alternative 5. In addition to estimated future conditions, alternatives were also evaluated and compared on how they respond to the goal of USDA's gypsy moth program, how they respond to issues, their environmental consequences, and the flexibility they provide for managing ecosystems.

Comment

Information that was used to project conditions by the year 2010 in table 2-2 and figures 4-2 through 4-7 should be shown. (62)

Response

Conditions by the year 2010 were predicted using information in historic records of defoliation, of the size of the generally infested area, and of USDA suppression and eradication projects. The sources of this information are cited in chapter 2 under Expected Future Conditions. This section, which also describes how the information was used, was updated for the final environmental impact statement.

Comment

Table 2-2 suggests significant outbreaks and defoliation, even under alternative 6, yet tables 2-3 through 2-8 show low impacts due to the gypsy moth (59).

Comments and Responses

Response

Table 2-2 shows conditions for the entire generally infested, transition, and uninfested areas. Tables 2-3 through 2-8 show the potential for effects only for the areas that would be treated or suited for treatment within each of these areas.

Comment

The associated cost data must eventually be presented. Why was no detailed economic information provided, and no benefit-cost analysis included? (62, 103)

Response

Economic analyses will be included in site-specific analyses.

Comment

There is no analysis of ecological consequences of actions taken to control the gypsy moth by persons outside the cooperative program (58, 62). There should be information on what pesticides are registered for use against the gypsy moth and data or estimates of the various pesticides used (58).

Response

Ecological effects were assessed for treatments available within the national gypsy moth management program because these effects result from action taken to implement the program. Private treatment for gypsy moths with a variety of insecticides are acknowledged. A brief section under Treatments Not Used in Management Projects in *appendix A* describes some of the other insecticides that have been used in the past by the USDA and others, and that are registered by the U.S. Environmental Protection Agency. An inclusive list of registered insecticides was not vital to making a reasoned choice among the alternatives.

Comment

Alternative 6 was chosen more for economic effects on the future timber supply than for the

effects on people, wildlife, ecosystems, water quality, and property values. (114)

Response

An economic analysis was not performed. Alternatives were compared and evaluated on estimated future conditions, how they respond to the goal of USDA's gypsy moth program, how they respond to issues, and the flexibility they provide for managing ecosystems.

Other

Comment

A respondent questioned the order in which the alternatives are presented. (62)

Response

Alternatives are presented beginning with no strategies, and adding one strategy at a time. To avoid confusion, the alternative numbers were kept the same between the draft and final documents.

Comment

Suppression in residential areas does nothing to slow the spread, and needs discussion in the main body of the environmental impact statement. (143)

Response

Suppression prevents or minimizes heavy defoliation by reducing outbreak populations of the gypsy moth where it is already established. Slowing the spread is not an objective of suppression. Objectives are provided in *chapter 2* under Description of the Strategies.

Comment

Detection monitoring costs less than spraying, and should be improved to limit the size of spray areas, and used as part of the slow-the-spread strategy. (59)

Response

Detection monitoring is an important activity in the slow-the-spread strategy.

Comments and Responses

Comment

Table 2-1 suggests that noninsecticidal treatments would be used in suppression under alternative 4. This appears to be an error since noninsecticidal treatments are generally ineffective in suppression. (59)

Response

Agree. This error was corrected.

The following comment was noted. No response is required.

Comment

One respondent stated opposition to spraying, but added that local citizens can and should make these choices. (7)

Treatments

Letters

6, 9, 10, 15, 16, 21, 27, 37, 46-50, 58-60, 63-66, 68-73, 77, 81-83, 85, 87, 88, 90, 91, 93-95, 97, 99-102, 109, 112-114, 116-118, 121, 127, 129, 132, 135-138

Respondents have much to say about treatments in general and about specific treatments that could be used to manage the gypsy moth. Many letters containing numerous comments were received on this subject. Several respondents describe themselves as suffering from multiple chemical sensitivity (MCS). Given the large number of comments received and the wide range of subject matter contained in those comments, most were grouped into subcategories to be addressed. The subcategories are summarized then followed by a general response. A number of comments requiring individual responses follow the subcategory groupings.

General Comments on Treatments

Several letters contain comments about treatments in general.

The following comments were noted. No response was required.

Comment Summary

Two letters indicate support for treatments (72, 97), although one of these (72) is wary of applications in successive years. One letter expresses support for minimal control efforts but only when absolutely necessary (116). Two respondents state that the treatments were worse than the effects of the gypsy moth, and do not support treatment of any kind (95, 127).

Several other respondents (16, 68, 70, 82, 83, 93, 100, 101) specifically urge that chemicals or insecticides be avoided altogether, and one suggests that they be used as a last resort only (87). Four of these letters were from MCS sufferers (16, 70, 100, 101). On the other hand a number of respondents specifically state support for nonchemical treatments or gypsy-moth-specific means (87, 93, 112, 121, 129, 138) including natural or biological controls (15, 69, 71), use of the gypsy moth fungus (*Entomophaga maimaiga*) (49, 73, 77), silviculture and preventive care to promote healthy forests (49, 73), or other methods such as mass trapping, mating disruption, and the sterile insect technique (21, 117, 136).

Several respondents offer some observations and suggestions about treatments. For example two respondents support the use of trapping (48, 77), but one does not favor using the DDVP insecticide strip, and instead suggests that the traps be engineered to allow moths to enter but not to exit (77). The same respondent also suggests a large-scale tree banding program, which would put the unemployed to work. Another respondent notes tree banding methods catch large numbers of caterpillars and that if more people used this method the gypsy moth problem might be lessened (81). Another respondent offers that mass trapping was not effective for him (113).

Comments on Specific Treatments

Comment Summary

Many comments express opinions about the specific treatments that could be used to manage the gypsy moth.

Comments and Responses

Many respondents state that diflubenzuron should be used sparingly or not at all due to its effects on nontarget organisms or human health (10, 46, 48, 60, 66, 70, 71, 73, 77, 85, 87, 99, 112, 114, 117, 118, 121, 135, 137). Three of these respondents were MCS sufferers. One respondent offers that alternating diflubenzuron and B.t.k. or noninsecticidal treatments can reduce some of the long-term risks (64).

Several respondents state a preference for B.t.k. (46, 48, 60, 64, 65, 91). A few think B.t.k. should be used sparingly, used cautiously, or not used at all due to nontarget effects on native lepidopterans (77, 116, 117, 137). While generally in favor of using B.t.k., two respondents recommend it not be used under two circumstances: one, in habitats likely to harbor rare spring-feeding caterpillars, unless it is known that the species involved is not sensitive (91); and two, in the southern Appalachian Mountains to avoid large-scale regional spraying so as to protect ecologically sensitive areas (102). Several respondents including one MCS sufferer (70) suggest not using B.t.k. at all (70, 71, 94, 112, 121, 129). One chemically sensitive individual (109) states that during a spray program in 1994 only one member of her support group reported any possible adverse health effect from the B.t.k. spraying, and that one asthma sufferer stayed in a motel out of town on the advice of her doctor, and she has yet to be reimbursed for her expenses.

Several respondents favor the use of the gypsy moth nucleopolyhedrosis virus (NPV) product, Gypchek (21, 37, 48, 73, 87, 117), including its use in combination with parasites (87). Only one respondent states that Gypchek should not be used (71).

A couple of respondents urge that disparlure not be used because it presents a higher risk and creates more problems than it solves (117), or because the pheromone flake formulation contains diatomaceous earth (48). An MCS sufferer suggests that use be restricted near sensitive individuals (85). One respondent states that disparlure is preferable to insecticides (63), while another prefers that it be applied in gelatin capsules, which would degrade more readily than plastic flakes (73).

Several respondents offer a priority scheme for selecting treatments (9, 48, 59, 77, 117). All favor

either the use of Gypchek or B.t.k., and noninsecticidal means. Two respondents suggest that diflubenzuron use be limited to eradication, as a last resort, or not used at all (9, 59). One respondent suggests that if insecticides must be used then Best Management Practices as found in Kentucky Forest Practice Guidelines for Water Quality be used, and that the environmental impact statement should outline the Best Management Practices to be used (138).

Four respondents state that the environmental impact statement should include a mechanism for incorporating new or future technology, such as the gypsy moth fungus and new insecticides such as Mimic into the USDA gypsy moth management program (27, 47, 63, 90).

Response

Comments were noted. The choices of what treatment to use, where to use it, and how to apply it are made at the project level. Many factors are considered and weighed in reaching those decisions, including but not limited to ecological effects, health risks, costs, objectives to be achieved, local issues and concerns, as well as State and local regulations agencies must follow.

Information on how treatments are selected and their recent use patterns was added to the environmental impact statement in *chapter 2* under Treatments Available for Suppression. For example, in the last 10 years there has been an upward trend in the proportion of acres treated with biological insecticides each year in suppression projects. In 1995 almost 70 percent of the acres in cooperative suppression projects were treated with B.t.k. and Gypchek (virus), and only 30 percent with diflubenzuron. In addition the USDA continues to research, develop, and field test or improve lower-risk treatments, such as those involving disparlure and the gypsy moth virus.

A small amount of diatomaceous earth is added to the pheromone flake formulation as an antistatic agent to increase the flow of flakes through the application equipment. The amount applied with the flakes and dispersed over an acre is about 0.2 ounce (less than 1/4 cup) of material.

When new treatments become available, the USDA will determine whether changes are needed in the gypsy moth management program.

Comments and Responses

Comment

Why is the virus product not being used? Is there a problem with production or is it really effective? (6) People could be put to work trapping moths for Gypchek production, and thereby the unemployed could be employed (88).

Response

Production of Gypchek is a time consuming, labor intensive, and expensive process. Gypsy moth caterpillars must be infected with the virus and reared in a manner to maximize their growth and minimize contamination from other microorganisms. After their death the caterpillars are “harvested” by hand and processed into a powder containing the viral particles. About 500 infected caterpillars are needed to produce enough NPV to treat a single acre.

Before it can be used, the Gypchek powder first must be formulated with special additives to prevent its degradation by sunlight and to aid application by aircraft or ground equipment. Unlike other insecticides used for gypsy moth control, Gypchek requires two applications to effectively reduce gypsy moth populations. All of these factors combine to make Gypchek an expensive treatment. Therefore its use presently is limited to special areas where the use of *B.t.k.* is not an option.

Research continues on ways to reduce costs by streamlining production and improving formulations and effectiveness. Efforts are also ongoing to interest commercial firms in producing the insecticide. For more information about Gypchek see appendix A.

Comment

Sufficient justification for use of diflubenzuron is not provided in the draft environmental impact statement. The use of different rates of diflubenzuron raises questions. A specific rate for each program strategy needs to be stated and justified. (87)

Response

The rates of diflubenzuron used for treating the gypsy moth are approved by the U.S. EPA and are stated on the insecticide label. The maximum allowable rate is 1 ounce of active ingredient per acre per year. Since diflubenzuron was registered in 1978,

the Forest Service and APHIS have conducted numerous field trials and found that application rates as low as 0.25 ounce active ingredient per acre may be sufficient to meet the objectives of many projects. The application rate actually used is decided on a project-by-project basis depending on a number of factors, such as gypsy moth population levels, weather conditions, type of application equipment, and issues of local concern—just to name a few. In any event the application rate may never exceed the U.S. EPA-approved rate on the insecticide label, and in practice is usually one half to one quarter of that rate.

Appendix G (Ecological Risk Assessment) examines and presents risk information for use of the maximum labeled rate of diflubenzuron, and three lower rates commonly used in gypsy moth projects. This information is presented to assist project managers in choosing the most appropriate rate to use. The information in *appendix G* is clear in that lower application rates of diflubenzuron pose less risk to nontarget organisms.

Comment

One respondent representing a support group for those with environmental illness and multiple chemical sensitivities comments on the lack of information about inert ingredients available to the public. (109)

Response

The identity of inert ingredients in pesticide formulations is confidential and proprietary information, which companies are not required to divulge, even to the USDA. The manufacturers of the treatments described in this environmental impact statement, however, were willing to provide some information about inert ingredients for the Human Health Risk Assessment (*appendix F*). What we know, and what we can say about the inert ingredients is discussed in *appendix F* under each treatment. All of the inert ingredients in the treatments covered by this environmental impact statement are on U.S. EPA’s List 3 (not classified because data are insufficient) and List 4 (recognized as safe or believed to pose no hazard). The inert ingredients are largely comprised of animal and plant products (such

Comments and Responses

as bone meal, milk, grains) and some mineral mixtures (such as calcareous shale, dolomite, and fuller's earth). Mixtures derived from these products are likely to have low toxicity. Animal and plant products are generally recognized as safe, although some individuals may be intolerant or allergic to some of these materials.

Comment

Information about the active ingredient and inert ingredients in diflubenzuron is requested. Information is also requested on application method, spray preparation, and spray protocols. (83)

Response

Information about the active ingredient in diflubenzuron may be found in *appendix F*. The identity of inert ingredients is confidential and proprietary information, which the manufacturer does not have to reveal, even to the USDA. The information on inert ingredients that the preparers of the environmental impact statement were able to obtain is also presented under Diflubenzuron in *appendix F*. Diflubenzuron may be applied by aircraft or ground equipment, and information about the formulation and how it is used is given in *appendix A*. Spray protocols are established on a project-by-project basis and reflect local issues and concerns. For example, insecticides are applied under conditions that minimize the potential for drift outside the intended area; are not applied if school children are seen in the project area; and are not applied if significant rain is predicted within 4 to 6 hours after application.

Comment

The U.S. EPA expected that a summary report of data submitted for the reregistration of diflubenzuron would be available in September 1995, and that if there was a change in procedures for its application, they would need to be included in the environmental impact statement. (63)

Response

The USDA contacted the U.S. EPA, spoke with the responsible official on the reregistration process, and found there is disagreement among researchers on dermal absorption rates for diflubenzuron. Dermal absorption rate studies in progress will not be completed until September 1996. The summary report of data submitted for the reregistration of diflubenzuron will not be completed until after the dermal absorption studies are completed. When this information is available, the USDA will determine whether changes need to be made in the environmental impact statement.

Comment

No rationale was provided as to why noninsecticidal means are not proposed for use with the suppression alternative. They are effective suppression treatments. (64)

Response

Appendix A describes all of the insecticidal and noninsecticidal treatments that are sanctioned for use in USDA gypsy moth management projects and the conditions under which they are effective. Noninsecticidal methods are not effective in reducing damage caused during gypsy moth outbreaks, which is the objective of suppression. Noninsecticidal methods do have a role, however, in eradication and slow the spread.

Comment

The mode of action of diflubenzuron is more correctly described as disrupting cuticle deposition rather than inhibiting chitin synthesis. (64)

Response

Agree. Changes were made to the environmental impact statement where appropriate.

Comment

*Will parasites, predators, and the gypsy moth fungus (*Entomophaga maimaiga*) become viable treatment options? (50)*

Comments and Responses

Response

In the short term it is not likely that parasites, predators, or the gypsy moth fungus will become viable treatment options. If and when parasites, predators, and gypsy moth fungus become viable treatments, the USDA will determine whether modifications in the gypsy moth management program are needed.

Comment

Contrary to what is stated in the environmental impact statement, noninsecticidal methods could routinely be used in suppression projects but are less likely in eradication projects. (58)

Response

On the contrary, noninsecticidal methods such as mass trapping, mating disruption, and the sterile insect technique are most effective against low level gypsy moth populations typically found in eradication project areas. Between 1967 and 1993 mass trapping was used as a primary treatment on more than 20 percent of the eradication projects, and as a followup treatment on more than 70 percent of the eradication projects conducted (appendix A, under Mass Trapping). Mass trapping and other noninsecticidal means are not effective treatments to use in gypsy moth outbreaks where protecting foliage is a primary objective.

Comment

The environmental impact statement should include all materials which are registered by the U.S. EPA for use against the gypsy moth. A contact insecticide is needed for eradication. (58)

Response

Appendix A, under Treatments Not Used in Management Projects, acknowledges that other insecticides are registered by the U.S. EPA for the gypsy moth but are not included in the environmental impact statement. Contact insecticides such as acephate, carbaryl, and trichlorfon were commonly used in USDA gypsy moth eradication and suppression projects in the past, but usage has waned in recent years. At the time this environmental impact

statement was being prepared, the Forest Service and APHIS decided to focus on those insecticides that are used and are likely to remain in general use for the foreseeable future in cooperative gypsy moth suppression and eradication projects. Contact insecticides have had a limited to almost nonexistent role in recent USDA-sponsored projects, and the environmental impact statement reflects that reality. Therefore the list of available treatments is short. Contact insecticides are effective treatments, however, and while not sanctioned for use in USDA-sponsored projects, they may still be used by State and Federal agencies, and by private citizens.

Comment

Does figure 2-3 show only the number of projects per year, or does it also include ongoing projects? Also, how many years does the "average" project last? (58)

Response

Eradication data are collected and reported on a yearly basis. The bar chart referred to, which was renumbered figure 2-4 in the final environmental impact statement, includes what some people might call ongoing projects as well as new ones. The size of the eradication project area and how well the extent of the isolated infestation has been delimited have a bearing on how quickly it can be eradicated.

Comment

The U.S. EPA supports the findings of the Ecological Risk Assessment on DDVP. The U.S. EPA also suggests that traps be monitored for nontarget organisms and that impacts of DDVP in traps on the food web be studied. The U.S. EPA is also reviewing the need for regulatory action to mitigate human health risks from exposure to DDVP. (63)

Response

Comment noted. The numbers and types of nontarget organisms found in gypsy moth traps (both delta and milk carton traps) appear to be limited mostly to flying insects that blunder into the traps rather than are attracted to it, and predators like

Comments and Responses

spiders looking for easy prey. The occasional flying squirrel or other small mammal nesting in the trap appears to be an anomaly. Scarce resources currently are being allocated to study the long-term effects of insecticide treatments that have a more direct impact on nontarget organisms. Future use of DDVP in USDA gypsy moth projects will comply with the outcome of the U.S. EPA's review.

Comment

One respondent provides information about the possibility of gypsy moth control through the introduction of a small insectivorous Old World bird species. (77)

Response

Comment noted. The identification, evaluation, and introduction of exotic organisms to control the gypsy moth are outside the scope of this environmental impact statement. Any new treatment method that is shown to be effective in meeting the objectives of suppression, eradication, and slow-the-spread strategies can be added later to the list of treatments currently sanctioned in the environmental impact statement.

Comment

Why is there a lack of discussion about traditional biological control efforts and chemical insecticides? (132)

Response

A history of gypsy moth control including a brief discussion of biological control efforts and chemical controls is summarized in *appendix E*. *Appendix A* also presents information about chemical insecticides and biological control agents. The preparers of the environmental impact statement thought that more detailed discussion of these subjects was not needed.

Comment

The environmental impact statement does not examine the impact of exotic biological control agents under the banner "actions of others." (132)

Response

Actions of others are outside the scope of this environmental impact statement. It is not clear from the letter what, if any, specific control agent the respondent is concerned about. There has been recent interest in the gypsy moth fungus.

Transport of *Entomophaga maimaiga* to uninfected areas by people is regulated by APHIS and requires a permit. Concern has been raised about the wholesale inoculation of this fungus into areas where the gypsy moth is becoming established or will soon arrive naturally. The fungus is not specific to the gypsy moth, which presents a valid argument against introducing it to uninfected areas before its potential impact on nontarget moths and butterflies is better understood. On the other hand this point could be moot, because the fungus appears to be spreading rapidly on its own or with unintentional assistance from people.

Comment

Is the lack of consideration of other registered chemical insecticides in the environmental impact statement sending a mixed message? Are they safe and effective or are the impacts unacceptable? (132)

Response

Actually other chemical insecticides, such as carbaryl and acephate, that are registered for use against the gypsy moth just are not being used by Federal and State cooperators in USDA-sponsored gypsy moth suppression and eradication projects. Carbaryl was last used in cooperative suppression projects in 1987. A broad spectrum chemical insecticide was last used in cooperative eradication projects in 1989. The Forest Service and APHIS examined insecticide use in the cooperative program and decided to address in the environmental impact statement only those materials being used now and likely to be used in the foreseeable future. Insecticides like carbaryl and acephate may still be used by State and Federal agencies as well as by private citizens, but are not used by USDA when asked to cosponsor an eradication or suppression project.

Comments and Responses

Comment

The gypsy moth fungus is mentioned only briefly and its significance in causing collapse of gypsy moth populations in the East is not examined. (135)

Response

More information on the gypsy moth fungus was added to *appendix A* under Fungal Pathogens. The contribution of the fungus in causing collapse of gypsy moth infestations is becoming clearer every year as research continues and as more and more people report its occurrence in the field.

Threatened and Endangered Species

Letters 35, 39, 40-42, 58, 63, 79, 146

Comment

A few respondents identify threatened and endangered species likely or not likely to be affected by gypsy moth treatments in their area. (35, 39, 40-42)

Response

Internal canvassing of field offices in Region 5 of the U.S. Fish and Wildlife Service (northeastern United States) resulted in detailed responses that would be expected at a minimum at the project implementation level. The occurrence and vulnerability of species at risk is valuable and necessary to have for individual projects and defined treatment areas. As such, producing a nationwide list of species likely or not likely to be affected would duplicate efforts performed and needed at the project level. At the programmatic level of this document, specific treatment areas are not being proposed.

Comment

Several respondents comment on what level (programmatic, project, State) review for effects on endangered species should take place. (39, 40-42, 58, 63, 79, 146)

Response

The most effective level at which to review and analyze the effects on endangered species is the level at which the decision is made to act. This programmatic environmental impact statement analyzes information in support of a choice of gypsy moth strategies (suppression, eradication, slow the spread). No treatment will take place as a result of the decision made from this environmental impact statement. Treatment decisions will be made at the project level and, as a result, the potential for effects on endangered species will occur at the project level. This environmental impact statement directs project coordinators to conduct site-specific consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service regardless of the selected alternative. The U.S. Fish and Wildlife Service concurs with our approach for consultation on endangered and threatened species.

Comment

One respondent suggests a biological assessment be part of this environmental impact statement. (41)

Response

The level of detail required to do a proper biological assessment for a nationwide gypsy moth management program is beyond the capability of the Forest Service, APHIS, and the U.S. Fish and Wildlife Service. Biological assessments that are meaningful are tied to geographic locations and are species-specific. This intensity of analysis is necessary and appropriate at the project level. For these reasons a nationwide biological assessment was not done as part of this environmental impact statement.

Comment

One respondent identifies the need for a protocol to avoid impacts on threatened and endangered species. (63)

Response

This level of attention is necessary and appropriate at the project level, not at the national level of this environmental impact statement.

Comments and Responses

Comment

One respondent asks about Federal obligations under State threatened and endangered species laws. (58)

Response

State designated threatened and endangered species that are not also Federally listed, proposed, or category "1" species imply no obligation to Federal agencies. Cooperation between States and Federal agencies to conserve species, however, is a routine component of gypsy moth treatment projects. More detail on actions needed during site-specific analyses has been added to *chapter 2* under Mitigating Measures for Adverse Effects on Nontarget Organisms.

Comment

The U.S. EPA is concerned that the message on consultation be delivered in all appropriate places in the document and that notification include contact with local experts. (63)

Response

Consultation with the U.S. Fish and Wildlife Service—and when appropriate with the Marine and Fisheries Service—appears in *chapter 2* under Alternatives Considered in Detail, in *chapter 2* under Standard Operational Procedures, and in *chapter 3* under Nontarget Organisms.

In addition, a discussion on notifying the U.S. Fish and Wildlife Service—and when appropriate the Marine and Fisheries Service—and State agencies, and contacting local experts was added to *appendix B* under Treatment Projects. Also added was the recommendation to consult with local experts.

The U.S. Fish and Wildlife Service reviewed our proposal and concurred with our approach for consultation on endangered and threatened species under a national gypsy moth management program (Nickerson, Paul R. Letter to John Hazel. 1995 August 1. 1 leaf. Located at: U.S. Department of Agriculture, Forest Service, Radnor, PA).

The following comment was noted. No response was required.

Comment

A couple of respondents identify additional information (ingredients of products, methods of application, toxicity data, precautions) that would facilitate consultation between agencies and the U.S. Fish and Wildlife Service at the project level. (41, 42)

Mitigating Measures

Letters 59, 63, 70, 80, 85, 112, 134

Comment

Several respondents comment on the need to provide additional buffer zones, or other mitigating measures, to protect aspects of the environment or minimize human exposure to insecticides used in treatment projects. (59, 70, 80, 85, 112, 134)

Response

Decisions on mitigating measures are site-specific and will be addressed in the site-specific documents prepared for individual management projects. When the analyses for individual management projects are conducted, areas such as organic farms and bodies of water, and sensitive individuals will be considered in development of additional mitigating measures. General Mitigating Measures are described in *chapter 2*.

Monitoring

Letters 59, 63

Comment

Two respondents comment on the need to monitor treatment projects. (59, 63)

Response

Monitoring plans are developed by individual project managers based on the characteristics of the site and the management strategy being followed. This site-specific approach allows for flexibility in monitoring the environmental components of the site and addressing the specific needs of the project.

Comments and Responses

Public Notification

Letters 63, 85

Comment

Two respondents comment on public notification procedures. (63, 85)

Response

The procedures for notifying the public generally are left to the discretion of individual project managers. The section on Public Involvement and Notification in *appendix B* discusses the general procedures that may be followed.

Research and Data

Letters 15, 21, 32, 50, 57, 59, 67, 85, 91, 94, 95, 98, 110, 121, 123, 137

Comment Summary

General comments on research and data include the need to research environmentally acceptable control methods (15), the need for constant and continued research (32), the need for more research on alternative 1 (95), and that research on eradicating the gypsy moth should be ongoing (57). The majority of comments call for research and data on specific treatments including production and use of Gypchek (57, 67, 91); effects of Gypchek on nontarget organisms (21, 121); aquatic effects of B.t.k. (50, 94); degradation of B.t.k. and its inert ingredients outdoors and in homes (85); using the gypsy moth fungus as a control measure (121); and data and research on human health effects including those from inert ingredients (59, 98, 110, 123), contamination of biological formulations, and the gypsy moth itself (59). Data is needed on effects of the gypsy moth on native lepidopterans (137).

Response

Most of the comments on research and data describe topics that are currently being investigated both within the USDA and with cooperators such as

colleges, universities, and private organizations. This response gives additional background information on ongoing research and data needs. *Appendix B*, under Methods Development, Technology Transfer, and Research describes the roles that USDA agencies play in conducting research. Continuing research, methods development activities, and technology transfer are an important part of the USDA's efforts to manage the gypsy moth in the United States.

The Gypsy Moth Research and Development Program of the Forest Service's Northeastern Forest Experiment Station headquartered in Radnor, Pennsylvania, is a good example of the breadth of the gypsy moth research effort. The research plan for 1991-1995 describes the mission of the program as follows: "to develop the knowledge and technology necessary to maintain gypsy moth populations at economically and socially acceptable levels through IPM techniques" (U.S. Department of Agriculture, Forest Service. 1991. Gypsy moth research and development program; research plan 1991-1995. Planning document and activity schedule. Radnor, PA: Northeastern Forest Experiment Station; p. 3). The six goals of the research and development program are to provide the following:

1. Information on the environmental and socioeconomic impacts of the gypsy moth and associated management actions
2. Hazard rating systems for major susceptible forest types
3. Sampling techniques for decisionmaking
4. Options to manage the gypsy moth and its habitat
5. Models for predicting defoliation, spread, and dynamics
6. Decision support for gypsy moth management.

Research in support of goal 1 includes studying the nontarget impacts of *B.t.k.* and silviculture, and the effect that the gypsy moth has on wildlife, water, and vegetation. Under goal 4 research is being conducted to improve the performance of *B.t.k.* and Gypchek, and to evaluate promising pathogens as control agents. Studies are also being conducted on the sterile insect technique and silvicultural techniques for managing the gypsy moth.

Comments and Responses

In addition the Forest Service's National Center for Forest Health Management in Morgantown, West Virginia, is beginning a long-term study to monitor the effects of gypsy moth defoliation and the use of *B.t.k.* in gypsy moth management projects. The center is also supporting studies on the gypsy moth fungus, *E. maimaiga*.

Acquiring data on inert ingredients is problematic because these materials are covered by confidentiality laws. During the preparation of *appendix F* (Human Health Risk Assessment), manufacturers of *B.t.k.* (Abbott Laboratories, Novo Nordisk) and diflubenzuron (Uniroyal Chemical Company) generously provided some of this information to Syracuse Environmental Research Associates, Inc., the risk assessment contractor. The contractor described the results of that review in *section 4* on *B.t.k.* and *section 6* on diflubenzuron. To shed light on the issue of inert ingredients the preparers of the environmental impact statement researched the subject and prepared a report titled, The Consideration of Inert Ingredients in the Risk Assessment of Pesticides, which is available upon request.

The issues of contamination of biological formulations and health effects of the gypsy moth, are covered in *appendix F*. Manufacturers of these products test each batch of material for the presence of contaminating organisms.

Education and Information

Letters 38, 44, 61, 63, 87, 106, 113, 128

Comment

Several respondents identify the need for more public education about the gypsy moth. (38, 44, 61, 63, 106, 113, 128)

Response

Developing and distributing information pertaining to the gypsy moth is the responsibility of all agencies involved in working with the gypsy moth (*appendix B*, *figure B-1* and the section on Information and Education). Providing the public with information on the potential magnitude and

severity of the problem is also the responsibility of all agencies involved. Regardless of which alternative is selected the degree and intensity of information transfer and public education will be the direct result of the efforts of State agencies, local governments and Federal agencies on a project-by-project basis. Program level direction for a public education plan and distribution of information materials is beyond the scope of the decision being made as a result of this environmental impact statement. The preparers recognize that public education and the distribution of information about the gypsy moth directly influence public awareness and the overall effectiveness of any gypsy moth management efforts.

Comment

One respondent suggests that local groups (i.e., hikers, naturalists, lepidopterists) be sought out in developing project designs and locating sensitive species and their habitats. (87)

Response

The responsibility of developing and executing a public involvement plan for a project rests with the agency or agencies directly responsible at the local level. Individuals interested in nature and outdoor recreation and concerned about the gypsy moth or sensitive species in their local area should be invited to participate.

Comments on Parts of the Document

Comments in this section address specific parts in the draft environmental impact statement.

Summary

Letters 8, 24, 37, 51, 58, 91, 119, 128, 145

Comments and Responses

Comment

A respondent commented about the color and size of the pupa in the figure on page 2 of the Summary (8). Another believed the sequence of the life stages seemed arbitrary and suggested starting with the adult or eggs (58). The term "life style" under the discussion of the egg stage should read "life stage" or "longest lasting life stage" (58).

Response

We believe the respondent questioning the color and size of the pupa was referring to the caterpillar. Statements about coloration of the life stages were added to the figure in the Summary and to figure 1-3. The sequence of the life stages was intended to emphasize the caterpillar stage, which causes the problem. "Life style" was changed to "longest lasting life stage." The size range of the caterpillar was added to chapter 1 under Life Cycle of the Gypsy Moth.

Comment

One respondent questioned whether the transition area shown on the map for alternative 4 on page 7 of the Summary really would go untreated. (51)

Response

The transition area shown on the map is an approximation of its location in 1994. In chapter 2 the section on Where Slow the Spread Would Be Conducted explains that the transition area varies from year to year depending on geographic and climatic conditions, and whether gypsy moth outbreaks occur. As the generally infested area expands, portions of the transition area become infested, become part of the generally infested area, and may be treated under the suppression strategy. Alternative 4 does not include slow the spread, and the transition area would not be treated.

Comment

A numerical error was made on page 8 of the Summary which listed the size of the generally infested area as 255,874,560 acres in 1994. It should read 155,874,560 acres. (24, 51, 128)

Response

Agree. This error was corrected.

Comment

A respondent questioned our sincerity on safety since the photograph on page 21 of the Summary showed workers without goggles, face shields, long-sleeved shirts, or gloves (8). Another respondent questioned whether the notice in the photo on page 24 of the Summary is correct (58).

Response

The photograph on page 21 of the Summary, which also appeared on page 4-23, showed workers mixing Gypcheck. Use of goggles, face shields, long-sleeved shirts, or gloves is not required under the Gypcheck label instructions. Gypcheck can cause eye irritation, however, and wearing eye protection is recommended. The photograph was changed to avoid giving a wrong message about the handling of insecticides. The notice on page 24 was not accurate. The photograph, which also appeared on page 2-31, was changed.

Comment

The Summary would be more meaningful if it referenced specific pages in the environmental impact statement. (119)

Response

Summaries typically do not reference specific page numbers. A table of contents is provided for each chapter and appendix, subject headings are prominent, and an index is provided to aid the reader in finding subjects in the chapters and appendixes.

Comment

The transition area shown on maps should extend into northeastern Illinois and eastern Wisconsin up to the Upper Peninsula of Michigan. (145)

Comments and Responses

Response

Maps in the draft environmental impact statement correctly showed the transition area in 1994. Maps added to the final environmental impact statement (fig. 2-12) show estimated conditions in the year 2010 with the transition area expanded into eastern Wisconsin.

Comment

Studies on diverse groups (not just ladybird beetles) also show substantial reproductive impairment to females exposed to diflubenzuron and egg mortality in some groups. Change the first paragraph on page 20 in the Summary to incorporate this information. (91)

Response

Agree. The text has been changed.

Comment

The table of Strategies and Treatment Options Available Under the Alternatives on page 12 is inadequate for evaluating gypsy moth management options. (8)

Response

The purpose of the table is simply to show which treatments could be used under each alternative. The section on What Would Be the Consequences of the Alternatives contains an evaluation and comparison of the alternatives. A more complete and detailed discussion is provided in chapter 2 under Evaluation and Comparison of Alternatives.

Comment

After reviewing the Summary, one respondent suggested that the environmental impact statement include a full listing of trees that are favorite and nonfavorite foods of the gypsy moth. (37)

Response

Appendix D (Plant List) shows the susceptibility of plant species to feeding by the gypsy moth caterpillar.

Chapter 1. Purpose of and Need for Action

Comment

If the Asian strain of the gypsy moth has more than one generation, it needs to be discussed. (58)

Response

The capability of the Asian strain to produce more than one generation per year is no greater than that of the European strain.

Comment

"Nuclear polyhedrosis virus" is the correct term. (58)

Response

"Nucleopolyhedrosis" and "nuclear polyhedrosis" are both correct. Common usage within the Forest Service and APHIS is nucleopolyhedrosis, which also is used on the Gypchek label for the active ingredient.

Chapter 2. Alternatives Considered

Letters 49, 58, 59, 62, 89, 91, 119

Comment

Suggest changes be made to tables 2-3 to 2-9, which compare alternatives. (49, 62, 89)

Response

The purpose of these tables is to show how the alternatives compare on specific subjects related to the issues. The tables do not give precise measurements of effects of individual alternatives. Rather, they are a generalized summary of what could be expected to happen where treatments could be conducted (alternatives 2-6) or would have been conducted (alternative 1) cooperatively with the

Comments and Responses

USDA. The information presented in *tables 2-3 to 2-9* is based on the detailed information provided in *chapter 4 part C*, under Consequences of Alternatives.

Comment

Request more information be shown on maps. (58, 62, 119)

Response

The range of the gypsy moth throughout North America is out of the scope of the environmental impact statement. The environment that potentially could be affected by the gypsy moth in the United States is described in *chapter 3* under Location. A map could be misleading in that all areas with susceptible vegetation could not be shown on a national map. Therefore no map is provided.

Maps showing the predicted infestation status under all of the alternatives in the year 2010 were added as *figure 2-12*. Areas with the greatest potential for eradication activities are represented by the probability of isolated infestations shown for alternatives 1 and 2 in that figure.

The location of eradication projects for the Asian strain of the gypsy moth were added to *figure 2-3*, which was *figure 2-2* in the draft environmental impact statement.

Comment

Any reduction in moths and butterflies "would" (not "might," as was stated on page 2-23) affect food supplies for birds. (59)

Response

If all lepidopteran populations within an area were reduced or eliminated as a result of gypsy moth treatments, birds that feed on larvae or butterflies and moths would be forced to shift foraging areas or shift to secondary foods. Larval stages of butterflies, moths, and other leaf-chewing arthropods that produce chitin and feed during the few days after spraying are most affected by diflubenzuron. After *B.t.k.* application these effects are limited to a group of lepidopteran species within a few genera. Composition of lepidopteran diversity in treatment

areas changes during the season immediately after treatment. Variability in total numbers of butterflies and moths in treated areas is high, however, and ranges from reduced to increased numbers. In situations where the majority of lepidopteran species in a treatment area are actively feeding and susceptible to treatments, some birds would be forced to alter their feeding habits and patterns. This indirect effect would be the exception rather than the rule. Therefore, the statement was not changed.

Comment

One respondent felt that statements such as "Changes in . . . soil are not expected" on page 2-25 are misleading when discussing the effects of diflubenzuron. (59)

Response

Chapter 2 in an environmental impact statement serves two purposes: presenting a detailed description of the alternatives and summarizing the environmental consequences presented in chapter 4. Sometimes summarizing information oversimplifies the message and leaves a statement open for interpretation. In the case of soil, some soil- and litter-dwelling, litter- and leaf-eating invertebrates appear to be at risk from diflubenzuron (*appendix G, section 9.1.2.5*). Decomposition rates of organic matter, however, have not been observed to decline as a result of diflubenzuron treatments for the gypsy moth. This observation indicates that the basic functions of cycles that affect soil productivity and fertility are unaffected by diflubenzuron. The wording was changed to clarify the effects of diflubenzuron in soil.

Chapter 3. Affected Environment

Letters 33, 91

Comment

The amount of high risk vegetation in Alaska is underestimated in chapter 3. (33)

Response

Mention of susceptible vegetation in Alaska was added to *chapter 3* under Forests.

Comment

One respondent was curious as to why maple-beech-birch and elm-ash-cottonwood forest type groups are considered susceptible. (91)

Response

Forest type groups represent many species of trees. For instance within the elm-ash-cottonwood forest type group can be found river birch, sycamore, red maple and willow as well as elm, ash or cottonwood. Cottonwood, river birch and willow are susceptible; red maple and elm are resistant; and sycamore is immune. In addition water loving oaks (swamp white, live, pin, water, and swamp chestnut oaks) are commonly found in association with this forest type group but do not occupy enough basal area to influence the name. Maple-beech-birch forest type groups are usually found on drier sites and commonly have white, black, red, chestnut, or chinquapin oaks mixed in. Birch is susceptible to the gypsy moth, beech is resistant, and maples are resistant to immune. See *appendix D* (Plant List) for a complete list of tree species and their rank of susceptibility to the gypsy moth.

Chapter 4. Environmental Consequences

Comment

Chapter 4 needs to discuss the direct and indirect effects of each alternative relative to true issues. Topics instead of issues are used as headings. Discussion tends to be too general and has limited benefits in trying to evaluate the pros and cons of each alternative. (62)

Response

The comments obtained from scoping were accurately grouped into three principal issues described in *chapter 1* and also in *appendix C*: (1)

How does the presence of the gypsy moth affect people and the environment? (2) How do the insecticide treatments applied to the gypsy moth affect people and the environment? and (3) How do the noninsecticidal treatments applied to the gypsy moth affect people and the environment?

The effects of alternatives are discussed in *chapter 2*. *Chapter 4* is organized to address the effects of treatments on people (*part A*) and the environment (*part B*). Given the number of concerns about treatment methods, we felt that this was an orderly way to present the material and would foster thoroughness in answering the public's concerns, and our own. Specific analysis of the environmental and human health effects of the gypsy moth and treatments is provided in *appendixes F* and *G*. In addition to the documentation in this environmental impact statement, the team leader responded to many peoples' concerns and questions with personal correspondence.

Discussion is general in many areas, particularly in *chapter 2*. Given the broad geographical area covered, general discussion is all that is possible in analyzing the effects of the alternatives. Since the purpose of the environmental impact statement is to set broad program direction, the level and extent of analysis is appropriate for revealing the pros and cons of the alternatives. Further analysis of site-specific effects, both direct and indirect, are necessary before individual gypsy moth projects can be conducted.

Part A. Effects on Human Health and Safety

Letters 36, 48, 51, 58, 59, 64, 70, 84-86, 89, 91, 98, 99, 103, 110, 117, 119, 123, 126, 133, 136, 137, 144

Many comments suggest changes—additions, clarifications, deletions, or modifications—to the technical information in *chapter 4 part A* dealing with effects on human health. The comments were grouped into three categories: (1) technical information, (2) philosophical issues, and (3) editorial suggestions. Changes made to *chapter 4 part A* are listed at the end of this section.

Comments and Responses

Technical Information

Comment Summary

Respondents question why other potential influences were not considered in the risk analysis, such as these: effects of State, local, and individual treatments; other insecticides; effects from exposure to frass; psychological stress or risk from aircraft operations; consumption of exposed fruits and vegetables; or effects of nitrosamine reactions or “cellular communication message disruptors” (48, 58, 64, 86, 91, 98, 99, 110, 117, 123). Respondents request that additional data be included in the risk assessment (84, 86, 99, 103, 117, 133, 136, 144). Some respondents disagree with the conclusions or request more explicit information or data for clarification (36, 51, 58, 59, 85, 89, 91, 137).

Response

All comments were considered and evaluated for inclusion in the final environmental impact statement. Many of the suggested changes to *chapter 4 part A* reflect recommendations to change *appendix F* (Human Health Risk Assessment). When more recent, additional, or corrected information resulted in a change in the outcome of the analysis in *appendix F*, *chapter 4 part A* was also modified. When the change was minor, too technical for inclusion in *chapter 4*, or did not change the outcome of the risk analysis, *chapter 4 part A* often was left unchanged. When a respondent referred to information or a publication without appending it, the preparers of the environmental impact statement made every effort to obtain the information or publication to review and evaluate it, and incorporate it into the final document as appropriate. Some comments were determined to be either irrelevant or inappropriate for inclusion in *appendix F* and *chapter 4 part A*.

Philosophical Issues

Comment Summary

Some respondents offered comments that demonstrated a philosophical difference with, or a misunderstanding of, the manner in which technical information on human health effects was presented

in *chapter 4 part A*. Respondents thought that multiple chemical sensitivity was not presented in a balanced discussion (58), that the impact of the gypsy moth management program on those with multiple chemical sensitivity should be explored further (99, 126), that anecdotal case reports were unimportant to the risk assessment (58), or they thought that anecdotal case reports were not considered seriously enough in the risk assessment and disagreed with statements regarding the safety of diflubenzuron and B.t.k.(70). Other respondents disagreed with the risk assessment approach and methodology (58, 144), did not understand or did not agree with the application of hazard quotients (48, 117), and noted fundamental differences in the exposure assessment methods used by the U.S. EPA and the USDA (133).

Response

Many of these comments about *chapter 4 part A* relate to the way in which the Human Health Risk Assessment was prepared and subsequently represented in the chapter. The risk assessment was prepared by individuals who are well-known in the relevant scientific community and whose professional judgment is respected. It is not uncommon, however, to have contrary viewpoints regarding analytical processes, and any one method is not necessarily the only valid option. Respondents who were generally critical of the risk assessment in *appendix F* were likewise critical of the information as it was presented in *chapter 4*. There are likely to be unresolvable differences in methodological approaches. *Appendix F* now includes all relevant data and available information, along with explanations of all methods and assumptions used. Every effort was made to transfer the information from *appendix F* to *chapter 4 part A* as accurately and simply as possible.

Editorial Suggestions

Comment Summary

A number of respondents suggested editorial changes to *chapter 4 part A*. Respondents requested clarification of the term “sensitive subgroups” (36, 58), and preferred different wording—sometimes to change meaning (58).

Comments and Responses

Response

All comments were considered with the notion that changes should provide the most accurate information without introducing unnecessary technical material. Suggested wording changes that clarified information without changing the meaning were often made. When wording changes altered the original meaning, these suggestions were evaluated to determine whether the change would provide a clearer description. In some cases, changes were made. In other cases, the preparers of the environmental impact statement thought that the wording in the draft document provided the clearest, most descriptive discussion, and left the document unchanged.

Changes Made

The following represent some of the major changes incorporated into *chapter 4 part A* as a result of comments on *appendix F* as well as on *chapter 4 part A*.

- A paragraph that addresses the uncertainties inherent in risk assessments was added under Use of Risk Assessments. (58)
- A paragraph that discusses multiple chemical sensitivity was added under Methods, Risk Characterization (51, 58, 99, 126). "Sensitive subgroup" was added to the Glossary (36).
- A statement that describes the specific effects for which data are lacking or uncertain was added under Uncertainties for the Risk Characterization under Effects Due to *Bacillus thuringiensis* var. *kurstaki*. (36, 58)
- The caption for *figure 4-1* was revised to help explain what hazard quotients mean. (48, 117, 137)
- The second paragraph under Hazard Identification, Effects Due to Diflubenzuron, was rewritten to clarify the potential human health effects from exposure to diflubenzuron. (58)
- Based on the availability of new information, the carcinogenicity of diflubenzuron, its breakdown product 4-chloroaniline, and the organophosphate insecticide dichlorvos was updated. (58, 75, 84, 133)

- Information was added and references were updated dealing with the estimation of dermal absorption under Effects Due to Diflubenzuron (58).
- The dose rate of gypsy moth virus to which experimental animals have been exposed was corrected to 3750 mg/kg/day under Effects Due to Gypchek. (75)
- The section on Effects Due to Gypchek was changed to state that the general public is not likely to be exposed to Gypchek by it splashing in their eyes, as workers might be. (75)

Part B. Ecological Effects

Letters 35, 37, 42, 47, 53, 59, 62, 63, 79, 88, 89, 91, 130, 142

Editorial comments relating to ecological subjects were grouped into five categories: (1) concerns not addressed or insufficiently addressed; (2) editorial recommendations; (3) additional information; (4) disagreement with statements or conclusions; and (5) disagreement with methods. All comments were carefully reviewed and considered. In some cases the comments resulted in changes or clarifications in the environmental impact statement.

Missing or Insufficient Information

Comment Summary

A number of respondents felt that one or more of their ecological concerns were insufficiently addressed (35, 42, 47, 53, 63, 79, 91, 130, 142) or not addressed at all (37, 63, 88, 89).

Response

When given the choice, many people chose to receive only the Summary and not the complete draft environmental impact statement. The nature of a summary dictates that it not be as thorough as the document from which it was derived, but that it simply summarize the main points. In some cases, the respondent clearly was reacting to the Summary and

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had not reviewed the complete document. The preparers included in the Summary the most pertinent information that will help the reader understand the proposed project, the alternatives, and their potential impacts.

In other cases, information that was believed to be lacking in the draft environmental impact statement was indeed present but was not seen by the respondent. Certain features have been included in the document to help the reader locate information. When information that is pertinent to a particular topic is presented in another section of the document, we have referred the reader to that other section. We have also provided detailed tables of contents for each chapter and appendix, and—in the case of *chapter 4*—for *parts A, B, and C*. To further assist the reader, we have also provided indexes.

Finally, in a number of cases respondents felt that their ecological concerns were not addressed in sufficient detail. Since this environmental impact statement is a programmatic document dealing with potential impacts nationwide, it was necessary to address issues in a broad fashion rather than in a site-specific fashion. For instance, susceptibility of wooded wetlands to the gypsy moth and the various treatments is not specifically mentioned. *Chapter 3* under Location and *appendix D*, however, do indicate the types of vegetation that are susceptible, irrespective of whether they are in wetlands.

The draft environmental impact statement also implies, although it does not specifically state, that diflubenzuron will not be used in infested wooded wetlands because it cannot be used over water. Each site-specific situation that may arise, such as concern for locally rare lepidopterans, cannot be analyzed in a programmatic document; however, the information needed to conduct such an analysis is presented. When site-specific analyses are conducted, as they must be before initiating a treatment, site-specific issues, such as wetlands, local populations of lepidopterans, or areas designated as wilderness, will be addressed. We have, nevertheless, made a number of changes in wording in the final environmental impact statement to clarify, in a programmatic fashion, the issues brought to our attention as being insufficiently addressed.

Editorial Recommendations

Comment Summary

Numerous comments in several letters gave editorial recommendations ranging from suggested word changes to addition of more specific and explanatory information. (51, 55, 58, 62, 84, 89, 91)

Response

These comments were all considered. In many cases, where the text could be clarified, the recommended changes were made. In other cases, when the recommended changes would have altered the meaning of the text or misled the reader, the changes were not made.

Additional Information

Comment Summary

Several comment letters provided new or additional data, references, or findings that were not reflected in the draft environmental impact statement. (53, 55, 59, 67, 91, 102, 136)

Response

All the new data and findings presented were carefully evaluated, and the new references were obtained and evaluated. In some cases, the new information was not as appropriate or was more dated than the information used in the draft document. In other instances, the new information confirmed the findings of the draft environmental impact statement. There were also instances where the new information helped to provide a clearer picture of the anticipated impacts. There were no instances where the new information resulted in radical or major changes in the conclusions of the draft environmental impact statement. Appropriate changes were made including changes to *appendix G* and the Summary.

Disagreements With Information

Comment Summary

A few respondents disagreed with specific statements or conclusions. (55, 58, 59, 91)

Comments and Responses

Response

Many of these disagreements were about wording rather than a true disagreement in meaning. In these cases, the wording was clarified and the disagreements resolved. In a few cases, either no change was warranted or the disputed statement was inaccurate as stated in the draft environmental impact statement. When this occurred, the inaccurate statement or conclusion was changed. These comments are appreciated because they resulted in changes that added to the technical accuracy of the final environmental impact statement. None of the changes, however, altered the overall conclusions that had been reached in the draft environmental impact statement.

Disagreements With Methods

Comment

The two-ecosystem approach taken in the analysis was inadequate. The respondent recommends that specific ecosystems should be analyzed in terms of potential impacts on lepidopterans. (88)

Response

This programmatic document provides analysis at the national level. It is impractical to analyze specific ecosystems because of the vast number of systems that would need to be analyzed. For programmatic purposes, the salient differences between ecosystems have been encapsulated in the two-ecosystem concept. For individual projects, site-specific analyses that can consider individual ecosystems may be appropriate. Such site-specific analyses are within the scope of the environmental analysis process.

Comment

The statement that cumulative effects are not quantifiable at the programmatic level contradicts the intent of the National Environmental Policy Act and the clear message of the consequences section of the environmental impact statement. While the predicted area to be sprayed is variable, some estimate of cumulative spraying is possible from

historical records. Impacts on nontarget species will be cumulative. (59)

Response

An exercise to quantify cumulative effects at the programmatic level of this environmental impact statement could be done. As stated under Cumulative Effects of Alternatives in *chapter 4 part C*, however, estimating cumulative effects of treatments as suggested by the respondent, would be speculative and potentially misleading. The text has been changed to state that cumulative effects were not quantified. General conclusions about cumulative effects are discussed under Cumulative Effects of Alternatives for each alternative. The potential for cumulative effects on nontarget organisms is stated.

Changes Made

A brief summary of changes made to the environmental impact statement regarding ecological effects follows.

- Information about how insecticides will be used near water was added in *chapter 2*, *chapter 4 part B*, and *appendix A*. (35)
- The type of birch trees (yellow and black) that are affected in the long term by heavy gypsy moth defoliation was specified in the Summary, *appendix G*, and *chapter 4 part B*; language was clarified in the Summary to indicate that moth and butterfly caterpillars are affected by diflubenzuron, and to resolve a conflicting statement about the effect of diflubenzuron on ladybird beetles. (51)
- Several changes were made in the Summary and *chapter 4 part B*, including the addition of information about effects of *B.t.k.* on mayflies and mayfly drift; effects on fish and other organisms. Additional attention was given in *chapter 4* to the description on effects of diflubenzuron on nontarget organisms. One reference citation was changed. (55)
- A reference concerning the effects of defoliation on wild turkeys was added to *chapter 4 part B*. (67)
- New information on the effects of multiple applications of *B.t.k.* was added to *appendix G* and *chapter 4 part B*; information from

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appendix G was brought into *chapter 4* to clarify a comment about the most appropriate model to use—lethal concentration₅₀ (LC₅₀) or median effective concentration (EC₅₀); the impact of heavy defoliation on spring- and summer-feeding caterpillars was changed in *table 4-4*; a paragraph was deleted in *chapter 4 part C* that suggested nontarget organisms were not at risk from suppression treatments; and a number of text changes were made in *chapter 4 part B* to clarify the effects of defoliation and of treatments on nontarget organisms. The term median effective concentration (EC₅₀) was added to the Glossary. A number of text changes were also made in the Summary to clarify effects of defoliation, the effects of treatments on certain nontarget organisms, and the persistence of diflubenzuron. (91)

- A new reference on the effects of *B.t.k.* on lepidopterans was added to *appendix G*. (102)
- *Chapter 4 part B* was changed to reflect the indirect nature of diflubenzuron's effects on gypsy moth parasites, and to clarify that one species and not "some" species of fungi showed growth inhibition at 50 ppm.

Part C. Environmental Consequences of Alternatives

Letters 59, 64

Comment

The statement on page 4-89 that cumulative effects are not quantifiable at the programmatic level contradicts the intent of the National Environmental Policy Act and the clear message of the consequences section of the environmental impact statement. While the predicted area to be sprayed is variable, some estimate of cumulative spraying that is likely to occur could be made from historical records. Impacts on nontarget species will be cumulative. (59)

Response

An exercise to quantify cumulative effects at the programmatic level of this environmental impact

statement could be done; however, as stated in *chapter 4* under Cumulative Effects of Alternatives, estimating cumulative effects of treatments as suggested by the respondent, would be speculative and potentially misleading. The text was changed to state that cumulative effects were not quantified. General conclusions about cumulative effects are discussed in the Cumulative Effects of Alternatives section for each alternative. The potential for cumulative effects on nontarget organisms is stated.

Comment

The risk of aircraft accidents or incidental traffic accidents that may occur as a result of distraction to drivers caused by low flying aircraft was not mentioned. (64)

Response

These risks were added to *chapter 4 part C* under Human Health and Safety, under Consequences of Alternative 2 and Consequences of Alternative 3.

Chapter 5, Chapter 6, and Chapter 7

Comment

What is a participating agency? (58)

Response

Early in the environmental impact statement project the Forest Service and APHIS invited Federal agencies and States to participate in developing a national gypsy moth management plan. The agencies listed in *chapter 6* under Participating Agencies responded to the invitation. They have provided input and have been kept informed of progress throughout development of the environmental impact statement.

Comment

One respondent questioned the need to list the preparers and to include the mailing list in the environmental impact statement. (8)

Comments and Responses

Response

The preparers and the mailing list are required sections of environmental impact statements under National Environmental Policy Act regulations (40 CFR 1502.10).

Chapter 8. Glossary

Letter 58

Comment

One respondent suggested other scientific and common names for the gypsy moth be included to aid someone independently trying to learn more about this pest. (58)

Response

Numerous scientific names have been used for the gypsy moth since it was first described in the mid 1700's. Before the current name *Lymantria dispar* L. was accepted, *Porthetria dispar* (L.) was used. Although numerous common names have been used in European countries, the name gypsy moth has been universally used in the United States. *Porthetria dispar* (L.) was added to the Glossary under gypsy moth.

Appendix A. Gypsy Moth Treatments

Letters 37, 55, 87, 92

Comment

How can egg masses be destroyed? (37)

Response

Simply fracturing or scraping an egg mass onto the ground is not sufficient to kill the eggs. Rather it is recommended that the egg mass be scraped into soapy water or an ammonia-water mixture, which will suffocate the eggs. A soybean oil formulation called Golden Natur'l Spray Oil may be mixed with water and sprayed or painted on egg masses. Petroleum products such as kerosene or creosote

should not be used, as these are harmful to the environment as well as to human health. More information is given in *appendix A* under Removing and Destroying Egg Masses.

Comment

Why don't more birds eat the caterpillars? (37)

Response

As predators, birds generally are opportunistic feeders. If something tastier than gypsy moth caterpillars is available, birds are likely to eat the tastier food. Gypsy moth caterpillars are hairy, and the older larvae are large. Choice tests have shown that most birds prefer hairless caterpillars to gypsy moth caterpillars. Additional information about predation by birds is given in *appendix A* under Predators.

Comment

Suggest modification of the language on page A-6, the second paragraph under Effectiveness of Diflubenzuron. (55)

Response

The paragraph was modified using wording from the Dimilin 4L label that relates its restricted use to toxicity to aquatic invertebrates. A statement was also added about diflubenzuron toxicity to terrestrial arthropods.

Comment

Suggest that use of parasites in conjunction with B.t.k. or Gypchek be considered in detail, particularly for use in the transition area. (87)

Response

As was stated, the use of parasitoids is not an effective means to meet the objectives of suppression, eradication, or slow-the-spread projects. While it is assumed that parasitoids help to maintain low-density populations of the gypsy moth, they do not prevent buildup of already-increasing populations typical in suppression areas (section on Parasitoids). Although some studies have correlated positive effects between

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parasitoids and biological insecticides, the effectiveness of this combination on a large scale is less clear. Therefore, it is listed under Treatments Not Used in Management Projects. Should a method be developed to effectively use a combination of parasitoids and biological insecticides, it may be appropriate for use in management projects.

Comment

Suggest expanding the discussion of biocontrols. (92)

Response

Information was added under Fungal Pathogens, Parasitoids, and Predators in *appendix A*.

Appendix B. Gypsy Moth Program

Letters 58, 89

Comment

APHIS announced it was planning on discontinuing domestic gypsy moth survey and quarantine activities and focusing on international gypsy moth exclusion efforts. How would this affect the gypsy moth program? (58)

Response

The preparers of the environmental impact statement are unaware of any plans by APHIS to discontinue domestic survey and quarantine activities.

Comment

One respondent questions whether biological control activities should be included in figure B-1. (89)

Response

Biological control activities fall under Methods Development, Technology Transfer, and Research in *figure B-1*.

Appendix D. Plant List

Letters 49, 50, 91

Comment

One respondent finds the environmental impact statement to be excessively large and difficult to read. Several parts of the environmental impact statement seem superfluous, for example, appendix D. Appendix D also fails to distinguish between the European and Asian strains, and lacks definitions of resistant and immune species. (49)

Response

Clarification has been added to the introduction to *appendix D*.

Comment

A respondent asks that several species be added to the list in appendix D. (50)

Response

Information is available for one of the species. Red alder (*Alnus rubra*), which is rated as 1—susceptible, was added to *appendix D*.

Comment

*In appendix D, the rating of *Carya tomentosa* as 2—resistant, is not consistent with field observations in New Jersey and Connecticut. It should be 1—susceptible.* (91)

Response

The “resistant” rating for mockernut hickory, *Carya tomentosa*, is a correct composite rating based on five laboratory studies. Field conditions could indicate a different rating; however, no known field studies provide a susceptibility rating for mockernut hickory. The respondent’s field observation may be correct.

Appendix E. History of the Gypsy Moth and Control Efforts

Letter 89

Comment

The heading “1980 to 1994: Integrated Pest Management Is Adopted” on page E-6 can give the impression that integrated pest management ended in 1994. (89)

Response

Agree. The heading was changed to indicate that USDA continues to support integrated pest management.

Appendix F. Human Health Risk Assessment

Letters 36, 58, 75, 83-85, 89, 91, 126, 133, 136, 137

Comments suggest additions, clarifications, deletions, or modifications to the technical information or analyses in *appendix F* (Human Health Risk Assessment). The comments were grouped into three categories: (1) technical information, (2) philosophical issues, and (3) editorial suggestions. Changes made to *appendix F* are listed at the end of this section.

Technical Information

Comment Summary

Respondents brought to our attention several studies that were inadvertently omitted from the Human Health Risk Assessment (84, 133) or mentioned studies or information for technical consideration (133, 136). One respondent noted errors in calculations (75). Some respondents requested additional information, and preferred

more complete explanation or different wording (36, 58, 75, 85)—sometimes to change the meaning (58). Some respondents felt that the risk assessment did not adequately address impacts on those with multiple chemical sensitivity or asthmatics (83, 126). Some respondents disagreed with the methods or conclusions or requested more explicit information or data (58, 75, 91).

Response

All comments were considered and evaluated by the preparers of the environmental impact statement. When more recent, additional, or corrected information or publications were submitted, they were evaluated for technical appropriateness, and included when relevant. When a respondent referred to information or a publication without appending it, the preparers made every effort to obtain the information or publication to evaluate it for incorporation into the document. Some comments were determined to be either irrelevant or inappropriate. Several more recent studies that were brought to our attention were incorporated into the analysis in the Human Health Risk Assessment and had an effect on the risk outcome. These changes are reflected in the revised *appendix F* and, if appropriate, elsewhere in the document. Calculation errors were corrected, but they did not change the overall risk. The preparers are grateful that respondents scrutinized the documents and provided these helpful suggestions.

In response to concerns that certain factors were not considered in the risk analyses, those factors were reviewed for potential relevance within the scope of the assessment. A number of comments were determined to be outside the realm of the risk assessment. The Human Health Risk Assessment, as with most documents of this nature, cannot feasibly encompass all individuals in all possible situations. As was pointed out in *appendix F* under *section 2.3*, the risk assessment applies to those individuals within a “normal” population, including sensitive individuals who are at the extreme lower end of a simple (unimodal) distribution. It does not apply to biologically sensitive individuals within subpopulations outside the normal distribution, as illustrated in *figures 2-3 and 2-4 in appendix F*.

Comments and Responses

Philosophical Issues

Comment

One respondent demonstrates a philosophical difference with, or a misunderstanding of, the manner in which technical information was used in appendix F (Human Health Risk Assessment). This respondent generally disagreed with the programmatic approach, the rationale for and the methodological approaches taken in the risk assessment, the use of numerical algorithms in any risk assessment, and the conclusions drawn. The respondent thought that risk assessments should be performed only on known data, to avoid conjecture and speculation. (58)

Response

All comments were evaluated critically by the preparers. Obvious differences between the respondent and the preparers in philosophy and direction regarding the risk assessment process cannot be overcome. In keeping with the National Academy of Sciences' recommendations for risk assessments (National Research Council. 1983. Risk assessment in the Federal government: managing the process. Washington, DC: National Academy Press; 176 p. + app.), the basic approach prescribed by the U.S. EPA was followed in the preparation of the Human Health Risk Assessment. Appendix F points out the assumptions made and the process used. This information allows readers to understand, as much as possible, the meaning of the analysis results, and makes it less likely that the results can be unintentionally misused.

Editorial Suggestions

Comment Summary

Respondents request clarification of the term "sensitive subgroups" (36), and think the document was too technical for the lay reader (58). Respondents also note typographical errors (58) and omissions of information that had been referenced within the text (75).

Response

Additions, clarifications, rewording, and editorial changes that were made to appendix F are reflected in chapter 4 part B when appropriate. The preparers recognize that appendix F may be difficult for lay persons to fully understand. Nevertheless, it was designed to include the details necessary to facilitate technical review, and at the same time, be informative to those individuals without a technical background in human health risk assessment. Each section of the document containing technical material begins with an Overview that summarizes the crucial points and the conclusions in plain language.

Appendix F is intended to be a technical document that provides scientific and technical support for the analysis in the environmental impact statement. Chapter 4 part A presents the information in a way that it is more understandable to the lay person.

Changes Made

The following represents some of the major changes made to appendix F in response to comments:

- "Sensitive subgroup" was added to the Glossary in appendix F, and a description of what is meant by "biologically sensitive" was added to section 2.3. (36, 58, 85, 83)
- Section 9.9 was rewritten to clarify the severity of effects from exposure to the gypsy moth and the treatments. (58, 85, 137)
- Cancer risks from diflubenzuron and the breakdown product 4-chloroaniline, and the organophosphate dichlorvos were revised, and appropriate references added, based on new information received. (58, 75, 84, 133)
- In section 2.4 the exposure of children was clarified versus that of adults. (58)
- A paragraph was added to section 2.5 to clarify and illustrate how a risk reference value (RRV) is derived. (58)
- Table 2-1 was revised to clarify that for voluntary risks the number of deaths in 1988 is not used directly in the calculation of risk and is not reported on the table. (58)

Comments and Responses

- *Section 6.2.1* was changed to clarify hematological, reproductive, and cancer effects of diflubenzuron and its metabolites. (58)
- *Sections 6.2.4* and *6.5.1* were changed to clarify the effect of diflubenzuron. (58)
- References were added on the method used to estimate dermal absorption of diflubenzuron. (58)
- A Table on Scientific Notation was added at the back of *appendix F*, and several numerical corrections were made in the text. (75)
- *Section 5.5* was changed to clarify the public's risk of exposure to Gypchek via splashing in the eyes. (75)

Appendix G. Ecological Risk Assessment

Letters 48, 50, 55, 58, 59, 91, 94, 128, 136, 137

Comments relating to *appendix G* (Ecological Risk Assessment) were grouped into two categories: (1) general comments regarding the risk assessment, and (2) technical and editorial comments. All comments were carefully reviewed and considered. In some cases changes were made in the Ecological Risk Assessment based on comments received.

General Comments

Comment Summary

A few comment letters expressed concern that the scope of the risk assessment was limited to the proposal as put forth in the draft environmental impact statement; that the risk assessment is not site specific; that it is inappropriate to use a quantitative risk assessment methodology to evaluate environmental impacts; that the risk assessment did not acknowledge the differences in ecosystems and climates throughout the country, particularly between the East and West, and relate those differences to transport, fate and effect of gypsy moth insecticides; and that the risk assessment was biased in favor of insecticides. (48, 58, 59, 94)

Response

The Ecological Risk Assessment was prepared to assess the ecological risk presented by the proposed Forest Service and APHIS gypsy moth programs. Therefore, it was inappropriate to assess the risks of all insecticides registered for gypsy moth control. The risk assessment was prepared as a programmatic risk assessment that can be used to assist in the qualitative determination of likely effects arising from site-specific applications.

Because each site differs ecologically, it is not possible to provide a meaningful, standard, quantitative risk assessment methodology that could be used by field personnel and could be universally applied throughout the United States. Quantitative methodologies were used in the programmatic risk assessment whenever there were sufficient data to meaningfully apply them. Quantitative methods were chosen because of their ability to provide an understanding of the degree of confidence that can be placed in the results.

The biases and assumptions of each of the models used are explicitly stated. In addition, the Ecological Risk Assessment acknowledges the many differences in ecosystems and climates across the country. After reviewing available literature on the fate and transport of the various insecticides analyzed, it was noted that fate and transport were far more affected by the amount of impervious surface available than by forest type. As noted under section 4 (Description of Program Areas) in *appendix G*, this information allowed the consideration of two unconventional ecosystems rather than numerous more conventional ecosystems. Finally, the preparers do not believe the Ecological Risk Assessment is biased in favor of insecticidal control of the gypsy moth. The risk assessment merely evaluates the risk from various treatments and the risk from no treatment.

The respondent who noted that the effects of gypsy moth caterpillars on forests were similar to commonly used forest management practices is, in a very broad sense, correct. The obvious difference being that, without treatment, there is no control over where, when, and how much the gypsy moth will exert its "management practices." This random application of "management techniques" creates chaos rather than order for the forest manager.

Comments and Responses

Current knowledge of gypsy moth biology does not allow its use as a forest management tool, now or in the foreseeable future. Forest management goals and objectives may be incompatible with the chaos created by the gypsy moth, thus leading to the desire to treat gypsy moth populations.

Technical and Editorial Comments

Comment Summary

Several respondents commented on technical issues, provided some additional technical information, or provided suggestions for editorial improvements to appendix G. (50, 55, 58, 59, 84, 91, 94, 128, 136, 137)

Response

These comments were all carefully reviewed and evaluated. In some cases, changes were made in *appendix G*. Whenever additional technical information was presented or alluded to, the preparers carefully evaluated the information, made every reasonable attempt to obtain and critically review any new references and incorporated the new information—to the extent that it was appropriate to do so. These comments, in particular, have added to the quality of the document.

One respondent questioned the applicability of the use of the Pesticide Root Zone Model (PRZM). While no model can precisely account for all environmental factors that may influence the transport of insecticides in the environment, PRZM was chosen in this case for several reasons: the model has been applied to a forest situation and its predictions have been validated by a field study; data sources were available for its required parameters; and it could be used in a generic context without requiring site-specific information. Site-specific analyses were not feasible in this programmatic environmental impact statement.

Changes Made

A brief summary of the changes made in *appendix G* as a result of comments follows.

- “Black and yellow birches” were added to the discussion of long-term effects due to heavy gypsy moth defoliation in *section 2*. (51)
- A number of updates in and additions to the references cited in *appendix G* were made. (55)
- Additional information was added to *appendix G*: a description of developed forests in the West; with exotic trees susceptible to the gypsy moth, in *section 4.4.1*; a statement that the model used does not apply to ground application, in *section 7.6.1.1*; and changes to the discussion of eradication taking into consideration eradication projects typical to California, in *section 10.3*. (58)
- *Section 5 of appendix G* was changed to indicate that the results of the soybean studies cited are dose-dependent, to include a study on the effects of diflubenzuron on earwigs, and to clarify the effects on gypsy moth parasites. Several comments about the fate and transport modeling of diflubenzuron resulted in changes in how the information is described or worded in *section 7* on Fate and Transport of Insecticides in the Environment. (84)
- Two comments dealing specifically with *appendix G* were accepted, and changes were made to *section 2*. A new reference on the effects of multiple *B.t.k.* applications was added. (91)
- A discussion of possible effects of *B.t.k.* on fish with alkaline digestive secretions was added. (94)
- A new reference was added on the effects of *B.t.k.* on lepidopterans. (102)
- A brief description on effects of drought was added to *section 2 of appendix G*. (128)

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Do not apply insecticides when there is danger of drift or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of insecticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If hands become contaminated with an insecticide, do not eat or drink until you have washed. In case an insecticide is swallowed or gets in the eyes, follow the first-aid treatment given on the label and get prompt medical attention. If an insecticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Store insecticides in original containers out of the reach of children and animals, and away from food and feed.

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